# NPDES Municipal Separate Storm Sewer System (MS4) Discharge Permit Renewal

## Jefferson Parish, Louisiana

## 2017-2021 STORMWATER MANAGEMENT PROGRAM FOR JEFFERSON PARISH

*June 2016*

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# INTRODUCTION

This Storm Water Management Plan has been drafted to meet the requirements of Jefferson Parish's (Parish) Municipal Separate Storm Sewer System (MS4) permit issued by USEPA's Region VI. This permit has been created by the USEPA under the National Pollutant Discharge Elimination System (NPDES) to address the water quality issues associated with the storm water runoff from the drainage areas included in the MS4 permit.

In order to provide some perspective on the unique nature of this type of permit for the Parish, this introduction provides a brief description of the drainage and flood control system that comprises the MS4. The Parish is bounded on the north by Lake Pontchartrain (St. Tammany Parish), to the east by Orleans and Plaquemines Parishes, to the west by St. Charles and Lafourche Parishes and to the south by the Gulf of Mexico. The drainage areas included in the MS4 are those portions of the Parish adjacent to the Mississippi River. The portion of the Parish north of the River is referred to as the East Bank, while the portion south of the River is referred to as the West Bank. Because much of the land in the Parish is at an elevation at or below mean sea level (MSL), the entire East Bank and a portion of the West Bank are surrounded by flood and hurricane protection levees. The levees bordering the Mississippi River are at approximately elevation +28 feet above MSL, while the levees bordering Lake Pontchartrain, the Barataria Basin and adjacent Parishes average about +16 feet above MSL. The difference in levee elevations is due to the separate nature of the threats that they protect against. The Mississippi River levees are intended to protect against flood stage water levels in the river, while the remaining levees are intended to protect against hurricane induced tidal surges in both Lake Pontchartrain and from the Barataria Basin to the south.

**Storm Water Drainage System**

As a result of this system of levees, there is no gravity drainage discharge outlet from within the MS4. Rainfall occurring within this area is removed entirely by a system of conveyance canals and pumps. The canals transport the runoff from the local gravity collection basins to the pumping stations. High volume, low-lift pumps are used at the pumping stations to lift the water from the canals to the higher water surface elevation of either Lake Pontchartrain or to the lakes, bayous and canals of the Barataria Basin. Water will also be discharged to the Mississippi River through pumps installed as part of the Pump to the River project. This project is anticipated to be completed in Summer 2017.

Jefferson Parish's topographical characteristics and below sea level elevations have necessitated unique facilities such as protective levees, open drainage canals, and pump stations to provide adequate drainage and flood protection. Over the years, Jefferson Parish's MS4 has evolved into a system of over 300 miles of open drainage canals and ditches for collection and conveyance of storm water runoff. Jefferson Parish drainage system serves approximately 80,200 acres of industrial, commercial, residential, and unclassified areas. The system is subdivided into four main basins with boundaries provided by the Mississippi River, Harvey Canal, Parish boundaries, and flood protection levees.

In addition to the over 300 miles of open canals and ditches, Jefferson Parish maintains approximately 1,620 miles of subsurface drain lines providing local drainage to the urban life style. Storm water runoff from residential, commercial, and industrial land areas are drained via drop inlet. Subsurface drainage lines convey storm water into open drainage canals. Finally, storm water is discharged into waters of the United States through several high capacity pump stations.

**Drainage Pump Stations**

Most of the land surface within Jefferson Parish is at or below sea level elevations. This topographical characteristic has created a “saucer” effect in the drainage basin. Therefore, Jefferson Parish has, over the years, designed and constructed several high capacity pump stations to convey collected storm water runoff within the storm water drainage system to waters of the United States.

Jefferson Parish currently owns and operates 24 major pump stations to minimize local flooding within the MS4 Permit area. The East Bank has 6 pump stations that have a total capacity of 20,545 cubic feet per second (CFS) serving an area of 31,734 acres. The West Bank has 18 pump stations with a total capacity of 25,101 CFS serving an area of 48,483 acres. These pump stations combined have the capacity to pump storm water at a rate of approximately 30 billion gallons of rainfall per day. In addition to the major pump stations, Jefferson Parish also owns and operates 21 small pump stations. The East Bank has 3 pump stations that have a total capacity of 220 CFS. The West Bank has a total of 2 pump stations that have a total capacity of 185 CFS. Lafitte and Crown Point have a total of 16 pump stations that have a total capacity of 562 CFS. These small pump stations combined have the capacity to pump storm water at a rate of approximately 84 million gallons of rainfall per day.

The Jefferson Parish Department of Drainage currently maintains a constant water level in the canals to minimize fluctuating groundwater and to reduce regional subsidence and canal bank slope failures. The operation of the pump stations in this manner renders the open drainage canal system as very long, slender retention basins.

# SECTION 1: STRUCTURAL CONTROLS AND STORM WATER COLLECTION SYSTEM OPERATION

## 1.1 Program Description

In accordance with State and Federal requirements, Jefferson Parish (Parish) has developed a Phase I compliant and community-specific Storm Water Management Program (SWMP). The Parish's SWMP includes Structural and Source Control Measures as required by 40 CFR 122.26(d)(2)(iv)(A) through 122.26(d)(2)(iv)(D) for Municipal Separate Storm Sewer Systems (MS4). This section outlines the Parish's procedures for structural controls inspection, maintenance, and documentation.

Jefferson Parish uses many programs to control discharges from its storm water collection system. These programs include structural controls and non-structural controls, such as source controls and operational best management practices. Structural controls are used to increase the hydraulic capacity of the storm water drainage system. Non-structural controls address source control and elimination to reduce pollutants entering the storm water drainage system. Non-structural controls include periodic cleaning operations and monitoring programs.

## 1.2 Jefferson Parish Jurisdiction

The Parish is responsible for the design, construction and operation and maintenance of all storm water drainage canals and pump stations within the MS4 boundary. The City of Gretna is an exception. The city retained the responsibility for the operation and maintenance of all open drainage canals and ditches within its city limits. Jefferson Parish is not responsible for subsurface drainage lines within the city limits for the incorporated cities of Gretna, Harahan, Kenner and Westwego.

## 1.3 Inspection and Maintenance

The Jefferson Parish Departments of Drainage and Streets ensure that the MS4 is operating properly in order to prevent flooding and minimize contaminated storm water runoff during rain events. Catch basins are cleaned during street sweeping activities. In addition, the Department of Drainage cleans catch basins from calls generated by citizens' complaints.

Parish personnel visually inspect all major drainage canals every two weeks. During bimonthly inspections, Parish personnel identify canal bank failures due to shoulder erosion. The Department of Drainage normally maintains a 2:1 slope in all canal banks to prevent bank failure. Parish personnel repair collapsed banks with limestone and/or toe retention bulkhead. In addition, canal banks and shoulder are seeded to prevent erosion.

Dredging operations are conducted using long-reach back hoes and excavation equipment. Large canals are dredged by Parish contractors if they cannot be maintained with the Department of Drainage's equipment.

Vegetation control on canal banks is performed through a combination of mowing and herbicide application. The vegetative control method selected for use at a site is dependent upon the site accessibility, the amount of vegetation to be controlled, the length of the growing season, and available resources and personnel. The Department of Drainage uses in-house personnel and private contractors to maintain canal banks within the Parish. The private contractor properly disposes of all collected debris and litter.

In addition to the routine bimonthly inspection, drainage canals are inspected following parades and special events (e.g. Mardi Gras, Saint Patrick's Day, etc.). During visual inspection, Parish personnel identify canal bank failures due to erosion and nutria damage, accumulated litter and undesirable vegetation.

The drainage pumping stations are equipped with coarse bar screens, or "trash racks," which protect the pumping equipment and provide a water quality benefit by removing floatables and other large debris prior to discharge into local waterways. The bar screens are cleaned either mechanically or manually to maintain adequate hydraulic conveyance through the screens. Debris from the screens is disposed of as solid waste at the landfill. Other Parish departments such as the Departments of Parkways and Streets provide additional assistance with bar screen cleaning at some pumping stations, especially in conjunction with storm events.

### 1.4 Measurable Goals

The **Department of Drainage** is responsible for the following maintenance activities during each annual reporting year:

- Clean subsurface drainage lines periodically by use of combination high pressure washer/vacuum trucks. Additionally, catch basins and drop inlets are cleaned on an as-needed basis using a vacuum truck to remove the debris from the clogged structures.
- Maintain Spill Prevention Control and Countermeasure (SPCC) and Storm Water Pollution Prevention Plans (SWP3) for Parish facilities subject to these regulations including drainage pump stations.
- Dredge canals on a routine, as-needed basis to prevent silt accumulation and maintain hydraulic flow.
- Repair, stabilize and reinforce canal bank failures caused by erosion or nutria damage.
- Execute reconstruction projects such as upgrading portions of under-sized drainage systems and closing open ditches with pipe for efficient flow of storm water. In addition, the Department of Drainage focuses on improvements in drainage design (i.e., pipe outfalls into canals).
- Inspect canals for silt build-up monthly through routine visual inspection by superintendents, cleaning crews, and grass cutters.
- Inspect drains and catch basins for defects annually.
- Maintain canal system slope stabilization through concrete lining. Approximately 12 percent (12%) of the canal system is concrete lined.
- Maintain vegetation along the canals throughout the year using a combination of cutting and herbicide application.
- Clean the bar screens at all pumping stations on a routine, as-needed basis.
- Remove floatables from all pump stations and record and track data from all pump stations.
- Conduct post-Mardi Gras parade MS4 inspection and maintenance which includes trash removal from the canals, and inspection/cleaning of the drainage system along the parade routes.

During each annual reporting year, the **Department of Streets** has an asphalt crew, concrete crew, drainage/maintenance crew and a forming crew to assist with MS4 maintenance activities. The Department of Streets is responsible for the following:

- Clean catch basins, drop inlets, and lines up to 24 inches in diameter (Any drainage pipe larger than 24 inches in diameter is handled by the Department of Drainage).
- Clean drop inlets, catch basins, and pipes during wet weather conditions to allow proper drainage and flood prevention.

## SECTION 2: AREAS OF NEW DEVELOPMENT AND REDEVELOPMENT

### 2.1 Program Description

The Department of Planning administers zoning, subdivision and site plan review regulations within the Parish. For example, all properties within a Mixed-Use Corridor District (MUCD), a Commercial Parkway Overlay Zone (CPZ), CPZ-Ped, or Fairfield Overlay District (FOD), under the Parish's Comprehensive Zoning Ordinance, must meet landscaping and buffering requirements. Further, the Parish's Comprehensive Zoning Ordinance and Unified Development Code prohibit hazardous, nuclear, or radioactive waste treatment and disposal facilities within the Parish and limit the location of potentially infectious biomedical waste treatment and disposal facilities.

During the upcoming permit cycle, implementation of post-construction pollutant controls for areas of new development and significant re-development will continue. Post-construction pollutant control in areas of new development and re-development will be achieved through controls such as land-use planning, source controls and treatment controls. These controls are detailed in the Guidance Document for Post-Construction Pollutant Controls in Areas of New Development and Re-Development that was originally submitted to the USEPA on March 1, 1999 (see Appendix B). Through a combination of these controls, the Parish is able to require and enforce changes in storm water management practices in higher risk commercial and industrial areas.

Green infrastructure and low impact practices will also be implemented in areas of new development and re-development, per the Green Infrastructure and Low Impact Development program (See Section 13). Amended codes and ordinances, design guidelines and training will assist in encouraging green infrastructure and promoting stormwater pollution prevention.

### 2.2 Measurable Goals

During each annual reporting year, the **Department of Planning, Zoning Division** is responsible for the following:

- Require compliance with landscaping standards in the CPZ, MUCD, CPZ-Ped, FOD and other applicable districts in the unincorporated areas of Jefferson Parish through site plan review. This includes compliance with standards amended through the Green Infrastructure/Low Impact Development program.
- Perform site inspections for compliance with landscaping standards (a list of reviewed projects will be provided in the annual report).

# SECTION 3: ROADWAY SYSTEM MAINTENANCE

## 3.1 Program Description

This Roadway Maintenance Program (RMP) has been prepared in accordance with the National Pollutant Discharge Elimination System (NPDES) Permit requirements. This RMP summarizes Jefferson Parish's operations and maintenance policies and procedures to reduce the discharge of pollutants to waters of the United States from its roadway system. This section provides background information on the regulatory aspects of controlling storm water pollution while covering the general requirements of the Parish's NPDES Permit.

## 3.2 Purpose

The RMP was prepared to identify and describe the actions Jefferson Parish takes to reduce the discharge of pollutants to the MS4 from its roadway system. The major objectives of Jefferson Parish's RMP are to:

1. Conduct structural repairs to maintain the street paving and to avoid seepage of storm water through defective paving
2. Conduct periodic cleaning activities for catch basins and drop inlets
3. Conduct street sweeping to enhance source control and elimination
4. Control vegetation within street right-of-ways, roadsides and medians

The practices included in this program include administrative actions such as reporting and ordinance control; non-structural controls such as street sweeping and catch basins maintenance; and structural alternatives such as vegetative medians and roadsides that serve as filters for storm water prior to entering the collection system.

## 3.3 Jefferson Parish Jurisdiction

Jefferson Parish is responsible for the design, construction, and operation and maintenance of the majority of roadways within the MS4 boundary. The Parish is not responsible for the operation and maintenance of the roadway system within city limits for the incorporated cities of Gretna, Harahan, Kenner and Westwego. All State and Federal Highways within Jefferson Parish are operated and maintained by the Louisiana Department of Transportation and Development (LDOTD). During emergency situations, such as flooding and hurricanes, Parish personnel may assist incorporated cities during cleanup activities and restoration.

## 3.4 Maintenance Practices and Procedures

The Department of Streets is in charge of the maintenance of the streets throughout unincorporated Jefferson Parish. The Department of Streets cleans catch basins, drop inlets, and lines up to 24 inches in diameter (any drainage pipe larger than 24 inches in diameter is handled by the Department of Drainage) to reduce pollutant runoff and improve hydraulic capacity of the drainage system. The Parish utilizes vacuum trucks to remove accumulated debris. Collected debris is properly disposed of at a permitted disposal facility.

Jefferson Parish relies on citizen participation through reporting "problem areas" where trash and debris accumulate. Citizen complaints associated with street maintenance problems are investigated and corrected by the Department of Streets. These investigations serve to identify problem areas and facilitate the expedient scheduling and implementation of corrective actions, such as litter collection and removal accumulated on Parish-owned vacant lots. Upon notification from a Parish inspection or citizen complaint, the Department dispatches a cleaning crew to remove the litter or debris.

During street repairs, the Department follows best management practices to protect storm water quality. For example, in wet weather, the crews will pour cold mix to temporarily fix pot holes and wait until dry weather for a permanent repair. Potholes in roads are repaired on an as needed basis.

### 3.5 Street Sweeping

The Department of Parkways performs street sweeping and administers street sweeping contracts throughout unincorporated Jefferson Parish. The Department provides street sweeping and litter collection on the roadside and in street medians to reduce pollutant loadings to receiving waters.

A private contractor provides street sweeping services during special events such as Mardi Gras. Such immediate cleaning practices help reduce the pollutant loading into the open channel storm water collection system. The selected private contractor also assists during cleanup operations immediately following each special event (e.g. parades). Department of Parkways performs street sweeping services throughout the remainder of the year.

Many streets within Jefferson Parish have been classified as primary and secondary streets based on sweeping frequency. Primary streets are cleaned either weekly or biweekly, while, secondary streets are cleaned biweekly to monthly. All collected trash and debris is properly disposed of at permitted landfill. Jefferson Parish's personnel from the Department of Parkways perform inspections after street cleanup operations by the private contractor.

### 3.6 Vegetation Control

The Department of Parkways' primary objective is the maintenance of green areas located along the roadside and medians. Vegetative cover minimizes erosion and serves as a filter for pollutants that would otherwise enter the storm water drainage system. It operates in a two-week rotation for all green areas within Jefferson Parish. However during summer months, the maintenance schedule is increased to three times per month.

The Department of Parkways uses in-house personnel and private contractors to maintain medians and roadside areas within Jefferson Parish. Jefferson Parish currently maintains approximately ninety-two million square feet of vegetative areas. Jefferson Parish selects *a private contractor to assist the Department of Parkways to control vegetation. The private contractor conducts grass cutting and litter collection in more visible areas for aesthetic reasons. The private contractor properly disposes of all collected debris and litter.*

### 3.7 Deicing Activities

Roadways in the southern part of the State of Louisiana have very little need for deicing. Therefore, deicing and sanding activities are not common practices in Jefferson Parish. Deicing activities are predominantly conducted on either state or federal highways at overpasses and bridges. Deicing

procedures on these roadways are the responsibility of the Louisiana Department of Transportation and Development.

### 3.8 Measurable Goals

The **Department of Streets** is responsible for the following during each annual reporting year:

- Maintain the streets and associated infrastructure in a manner to minimize discharge of pollutants.
- Respond to hazardous material incidents that pose an exposure risk to the storm drain system.
- Clean catch basins and drop inlets during wet weather conditions to allow proper drainage and flood prevention.

The **Department of Drainage** is responsible for the following during each annual reporting year:

- Clean catch basins and drop inlets during wet weather conditions to allow proper drainage and flood prevention.

The **Department of Parkways** is responsible for the following during each annual reporting year:

- Maintain vegetative areas located along the roadside and medians.
- Oversee the street sweeping program.
- Administer the street sweeping contract of primary and secondary streets.
- Clean catch basin and drop inlets with the assistance of the Department of Drainage.

The **Department of Environmental Affairs** is responsible for the following during each annual reporting year:

- Respond to hazardous material incidents that pose an exposure risk to the storm drain system.

The **Fire Department Hazardous Materials Unit** is responsible for the following during each annual reporting year:

- Respond to hazardous material incidents that pose an exposure risk to the storm drain system.

# SECTION 4: FLOOD CONTROL PROJECTS

The Department of Drainage assesses impacts on receiving water quality for all flood management projects. This process includes preparing a report to evaluate the feasibility of retrofitting existing structural flood control devices to provide additional pollutant removal from storm water.

## 4.1 Technical Criteria

A number of technical criteria are currently reviewed in the assessment of flood control projects. Not all of these are directly intended to address water quality impacts. However, a system of interagency reviews is currently in place to assess and document the anticipated post-construction water quality impacts from flood control projects. Technical criteria include: water quality, sediment quality, and ecosystem productivity for naturally occurring flora and fauna. Each of these criteria represents a major heading for numerous sub-groups of technical criteria that also relate to water quality.

Projects implementing green infrastructure practices will also be included in the assessment of flood control projects, as they may also have an impact on water quality, with decreased stormwater run-off.

## 4.2 New Flood Control Projects

Flood control projects are defined as projects occurring within the main transmission conduits, open or closed, and the associated drainage pumping stations. Changes are made to the drainage system by the Parish in response to, or in preparation for, flood related hydraulic design criteria. Based on the performance of the drainage system as a whole, the projects which increase the capacity of either the canals or the pumping stations will reduce flooding. Projects using green infrastructure practices will also aid in flood control, as decreased runoff rates will reduce the flooding potential. Therefore, the use of green infrastructure and low impact development will be encouraged. Additionally, these projects may affect the receiving waters of the MS4 and therefore should be assessed for potential water quality impacts.

## 4.3 Historical and Future Projects

An inventory of flood control projects was performed in the Parish to assess current projects and find future opportunities for flood control. This process also outlined the path a project takes within the Parish from conception to construction. The intent of this section is to review the current and potential flood control projects and the mechanisms through which these projects are completed so that an assessment of how water quality impacts are considered could be made.

Flood control projects undertaken solely by the Parish began in 1991 with a 53 million dollar bond issue. These projects included pumping station upgrades and construction. Projects funded under this bond issue are completed and in service at this time.

Most flood control projects are being constructed by the US Army Corps of Engineers (ACOE) under the Southeast Louisiana Urban Flood Control Program (SELA), which is a 430 million dollar flood control program administered under a cooperative agreement with the ACOE. Planning, design and construction of flood control projects are subject to permitting by the ACOE under Section 404 of the CWA and by the Louisiana Department of Natural Resources, Coastal Zone Management Division. The SELA project was reviewed by the ACOE for environmental impact at the reconnaissance stage and certified that the

construction of the project and its future operation will not violate the statutory water quality standards of the state for the receiving waters. The numerous projects being constructed under this program include canal widening, canal lining and pumping station capacity increases. All of these projects are underway and are jointly managed by the ACOE and the Parish.

Jefferson Parish submitted a report providing an Evaluation of Retrofitting Existing Flood Control Devices to Benefit Water Quality to the LDEQ on June 1, 2001, in compliance with the implementation schedule provided in Table III.A: Implementation and Augmentation of Storm Water Management Program of the Parish's LPDES discharge permit (LPDES Permit No. LAS000201).

### 4.4 Projects Performed by the East and West Jefferson Levee Districts

The East and West Jefferson Levee Districts (EJLD and WJLD, respectively, or Districts, collectively) operate as autonomous agencies created by the Legislature of the State of Louisiana. The Districts were created to improve, operate and maintain the levee systems that encircle the MS4 service area. The Districts are funded by local Ad-Valorem taxes, which are used as the local matching portion in a cooperative agreement with the ACOE.

### 4.5 Private Flood Management Controls

The Department of Planning requires developers to comply with Jefferson Parish Code of Ordinances regarding private flood management controls. Regulations governing storm water run-off detention are found in Jefferson Parish Ordinance 24049, § 2, 7-27-11 and state

> For all proposed developments, other than single-family residential, totaling ten thousand (10,000) square feet or more (all phases), and all single-family residential developments totaling five (5) acres or more (all phases), the ten-year storm event post-development rate of run-off shall not exceed the ten-year storm event pre-development rate of run-off. To insure that the post-development rate of run-off does not exceed the pre-development rate of run-off, on site detention will be required in a manner approved by the Jefferson Parish Department of Public Works. The detention system cannot release water from the site at a rate greater than the pre-development rate of run-off.

Developers will be encouraged to implement green infrastructure practices. This will aid in meeting the run-off requirements stated above and reduce flooding potentials caused by development.

The Parish is required by their NPDES permit to submit a summary report of evaluations conducted for existing flood control devices to determine the feasibility of retrofitting to benefit water quality. Additional information about this program can be found in the attached Report Evaluating the Feasibility of Retrofitting Existing Flood Control Devices to Improve Water Quality (see Appendix B). This report describes the existing flood control devices, identifies agencies responsible for the construction and maintenance of those devices, summarizes potential retrofits, and addresses the feasibility of implementing those retrofits within the MS4.

### 4.6 Measurable Goals

The **Department of Engineering** is responsible for the following activities during each annual reporting year:

- Require compliance with ordinances that address storm water run-off detention in the unincorporated areas of Jefferson Parish.
- Encourage the implementation of green infrastructure and low impact practices.

The **Department of Drainage** is responsible for the operation and maintenance of the individual pumping stations. As such, it is the lead department for the following program element during each annual reporting year:

- Maintain the hydraulic capacity of the canals and pipes through dredging, cleaning, and where applicable, construction of new pipe or canal stations.

# SECTION 5: PESTICIDE, HERBICIDE AND FERTILIZER APPLICATION

## 5.1 Purpose

The Pesticide, Herbicide and Fertilizer (PHF) Program was prepared to identify and describe practices and operating procedures employed by Jefferson Parish to minimize the discharge of pollutants to the MS4 from the storage and application of pesticides, herbicides and fertilizers.

## 5.2 Jefferson Parish Jurisdiction

Jefferson Parish is responsible for vegetation control within the MS4 boundary. However, the Parish is not responsible for vegetation control on streets within the city limits for the incorporated cities of Gretna, Harahan, Kenner, and Westwego. The Parish is responsible for vegetation control on all canals, throughout the MS4, including the cities. Furthermore, the Louisiana Department of Transportation and Development is responsible for vegetation control within State and Federal Highways.

## 5.3 Program Description

Under the Parish PHF Program, herbicide application is normally conducted in areas not accessible by mechanical equipment, during extreme growing seasons, and where there is a shortage of resources and/or personnel to mow. Departments that use herbicides follow all applicable state and federal regulations, and each department has a specialist certified by the Louisiana Department of Agriculture and Forestry. The following departments are involved, either directly or indirectly, in the maintenance of parks, recreational areas and green areas in streets, medians and drainage canals:

1. Department of Parks and Recreation
2. Department of Parkways
3. Department of Drainage
4. Department of Environmental Affairs

The Department of Parks and Recreation operates and maintains recreational parks and playgrounds in the Parish. Operational practices include litter control, vegetation control and general maintenance at each park and playground. Approximately 15% to 20% of its green spaces are maintained with herbicides and the remainder is maintained by mechanical cutting.

The Department of Parkways maintains green areas located on medians and along roadsides. Vegetative cover minimizes erosion and serves as filtration for pollutants that would otherwise enter the storm drainage system. The Department of Parkways maintains 10% of these green spaces with herbicides, and the remainder is maintained by mechanical cutting. Herbicide spraying is performed around light poles, signposts, and small areas that cannot be mechanically cut.

The Department of Drainage is the leading department for operation and maintenance of the storm water collection system. The Department of Drainage is also responsible for vegetation control within open drainage canals, including bottoms, slopes, and right-of-ways. Vegetation growth within the drainage canals is controlled to allow for maximum water flow. Herbicide spraying is performed along the canals periodically throughout the year in conjunction with cutting. Most of the spraying is performed by contractors.

The Department of Environmental Affairs inspects Parish employees and contracted spray crews to evaluate operational best management practices and ensure compliance with applicable regulations. The inspectors are certified as herbicide applicators and perform inspections in the following categories: Aquatic Pest Control, Right-Of-Way and Pest, Mosquito Control Applicator, and General Standards. Department of Environmental Affairs personnel are certified by the Louisiana Department of Agriculture for chemical applications (e.g. pesticides) and attend a refresher course every 3 years.

Inspections are conducted periodically on applications to Parish property during the spraying season and are recorded on a Pesticide Application Inspection Report Form (see Appendix A). Any issues noted by the inspector are highlighted for further action before filing the reports. When problems are noted, they are reported to the applicator's supervisor and/or the Louisiana Department of Agriculture and Forestry for corrective action. If a complaint concerning an application on private property is reported, the Department of Environmental Affairs works in conjunction with the Louisiana Department of Agriculture and Forestry to investigate the complaint. The Department of Agriculture and Forestry also performs random inspections of both public and private applications.

### 5.4 PHF Storage

All chemicals are stored indoors under lock and key. Storage facilities are ventilated have the proper lighting for safe personnel movement. All Parish pesticide/herbicide storage facilities are operated in accordance with the Louisiana Department of Agriculture and Forestry regulations. Departments that use PHFs order quantities new chemicals that can be used by the end of the spraying season. Jefferson Parish personnel store herbicide products in their original containers, sealed tightly. However, if small volumes of chemical must be placed in a separate container, personnel take precautions to place them in compatible containers so that the ability of the container to store the material is not compromised. All containers are washed, triple rinsed, and split prior to disposal.

Personnel using PHFs carefully read and understand label directions before application, because product labels provide instructions for all phases of use. Chemicals are not applied at higher rates than recommended by the manufacturer. All containers bear a label that contains the following information:

1. Label information required by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), if a pesticide is subject to registration under law
2. Accepted common name
3. Name and percentage by weight of each active ingredient
4. Directions for use, such as application rates and methods
5. Cleanup, storage, and disposal instructions

### 5.5 PHF Application

Successful weed control requires application of the correct amount of herbicides uniformly over a targeted area. Jefferson Parish personnel are instructed to closely follow application rates, as suggested by the manufacturer and take into account wind conditions to avoid "off target" damage to private property. As such, herbicides are not applied when wind velocities exceed five miles per hour (5 mph). Conventional hoses and handguns are generally utilized to spray herbicides in areas with high traffic volumes. Truck-mounted spray systems may be used in more segregated areas. The potential for herbicide movement in surface water runoff to storm water is also considered prior to application.

Jefferson Parish personnel evaluate weather conditions to allow a minimum eight hours between a spray event and a forecasted rain event.

In addition to herbicide application for unwanted vegetation control, airborne pesticides are sprayed for mosquito control on all Parish roads, including roads within the cities, during the mosquito season and rodenticides are used around the canals. Aerial spraying of pesticides to control mosquitoes is also performed when necessary. These pesticide applications are performed by contractors certified in pesticide application in accordance with the Louisiana Department of Agriculture and Forestry regulations. Fertilizers are not typically used on public right of ways, parks, and other municipal property. The local climate and soil conditions are such that desirable vegetation grows quite easily without artificial nutrition.

### 5.6 PHF Disposal Practices

Departments that use PHFs order quantities of new chemicals that can be used by the end of the spraying season. All Parish pesticide/herbicide storage facilities are operated in accordance with the Louisiana Department of Agriculture and Forestry regulations. Empty containers are triple rinsed and properly disposed of as recommended by the manufacturer. Rinsate is placed in the spray tank at the time of mixing to be applied at the next location being sprayed.

### 5.7 Personnel Training and Certification

Jefferson Parish participates in the State of Louisiana Department of Agriculture and Forestry's program for certifying pesticide and herbicide applicators. The Department of Agriculture and Forestry requires commercial pesticide and herbicide applicators to be certified prior to engaging in pesticide or herbicide activities. This certification course, provided annually by the Department of Agriculture and Forestry, includes a general application class and a specific training class for the particular pesticide or herbicide application being certified as well as training in the safe and proper handling, storage and disposal of these chemicals. After successfully completing the training class and passing the course examinations, the applicant is issued a license and certification card appropriate to the training received.

The license is valid for three years from the date of testing for the category certified. A refresher training course is mandatory every three years to renew the license. If these requirements are not met, the applicator or inspector will lose the certification and would be required to repeat the training and examination process.

### 5.8 Measurable Goals

The **Department of Environmental Affairs** is responsible for the following activities during each annual reporting year:

- Conduct inspections of commercial applicators and Public Works Department personnel applying pesticides, herbicides and/or fertilizers to roadsides, right-of-ways, and Parish drainage canals. At a minimum, all of these public work facilities will be inspected annually.
- Maintain the PHF license(s) of any currently licensed Jefferson Parish employees.

# SECTION 6: ILLICIT DISCHARGES AND IMPROPER DISPOSAL

## 6.1 Source Identification

The Department of Drainage performs system maintenance activities on a daily basis and as a result, visually screens the entire MS4 periodically. If dry weather flow is noted in the system, it is reported to the Department of Environmental Affairs by the public or Parish personnel, and it is investigated immediately in an attempt to locate the source and correct the problem. By combining Parish employee notifications with the citizen reporting system, the dry weather screening system has become an effective way of identifying potential problems in the storm drainage system.

The Department of Environmental Affairs conducts a dry weather screening program at outfalls in the open canal system to identify suspected illicit discharges, illegal connections and improper disposal. Additional information about this program can be found in Section 11.1.

## 6.2 Investigation

Jefferson Parish uses its legal power to create, adopt and implement ordinances to control discharges into the MS4. These ordinances make discharging pollutants to the MS4 illegal and punishable by law. Specifically, Section 16-9.2 of the Jefferson Parish Code of Ordinances prohibits littering and dumping of any debris, trash or garbage into any drainage canals ditches or drainage catch basins. When a responsible party cannot be identified, litter and trash accumulated within the storm water collection system is removed and properly disposed of by Parish personnel during inspections of the MS4, and in response to complaints.

The Department of Environmental Affairs responds to a wide range of citizen complaints that could impact storm water quality including sanitary sewerage concerns, air pollution, hazardous materials, fish kills, noxious odors, oil spills, medical waste disposal, dumpsters and illegal dumping. Complaints are investigated by environmental quality specialists and technicians and documented through complaint forms. If necessary, field sampling is conducted at the complaint location to confirm an illicit discharge. Sample analysis is dependent upon the nature of the complaint and suspected pollutants. Most complaints are resolved by educating the resident or business about proper disposal methods and by marking the storm drains in the area. However, several ordinances prohibit the disposal of wastes into the MS4 and investigators can also issue Notices of Violation as enforcement actions. If the violations are not corrected, the offender will be sent to Administrative Adjudication where fines may be imposed.

Depending on the type of complaint, the Department of Environmental Affairs can work with other agencies to reach a resolution. For example, the Louisiana Department of Environmental Quality can analyze sampling results and impose fines to violators. In these situations, industrial and commercial entities under investigation are given approximately thirty days to eliminate the illicit discharge, obtain a Louisiana Pollutant Discharge Elimination System (LPDES) permit, or reroute the non-storm water discharge to the sanitary sewerage system.

## 6.3 Measurable Goals

The **Department of Environmental Affairs** is responsible for the following activities during each annual reporting year:

- Conduct investigations of citizen complaints and resolve illicit discharge violations.
- Perform windshield screening during dry weather to identify evidence of dry weather discharges into open drainage canals in conjunction with the **Department of Streets** and **Department of Drainage**.
- Conduct windshield screening during wet weather to identify evidence of wet weather discharges into open drainage canals.
- Conduct windshield screening and investigate any public complaints of illicit discharge or improper disposal to eliminate the improper disposal.
- Collect used automotive vehicle fluids and automotive batteries at Citizen's Trash Drop-off Sites.
- Collect used cooking oil at two (2) drop-off sites
- Collect electronic waste
- Host a Household Hazardous Waste (HHW) collection day, as funds allow

# SECTION 7: SPILL PREVENTION AND RESPONSE

## 7.1 Spill Prevention

Jefferson Parish facilities and departments engage in spill prevention by implementing administrative, structural and non-structural best management practices and control measures. For many Parish facilities including wastewater treatment plants, water treatment plants, trash drop-off and recycling centers, landfills, drainage pump stations, and vehicle maintenance facilities, the guidelines for the development and implementation of such BMPs and control measures are provided in Spill Prevention, Control and Countermeasure (SPCC) Plans and Storm Water Pollution Prevention Plans (SWP3). The Department of Environmental Affairs initiates and reviews all updates to SWP3s and SPCC Plans for Parish facilities. The department also identifies facilities that require new plans and manages plan development.

The Parish's spill prevention program includes industrial facility inspections to ensure private, permitted facilities have met permitting mandates for secondary containment, SWP3 and SPCC Plans.

## 7.2 Spill Prevention, Control and Countermeasure Plans

In accordance with federal and state regulations (40 CFR 112 and LAC 33:IX.9), all Parish facilities that store an aggregate of 1,320 gallons or more of oil or other petroleum products have an SPCC Plan. This plan establishes the requirements for contingency planning and implementation of operating procedures and best management practices to prevent unauthorized discharges (spills) of oil and hazardous substances into waters of the United States and to control such discharges, should they occur, to minimize the effects on the environment. The SPCC plans are updated whenever there is a significant change in the materials storage and handling practices, or in the quantities or types of petroleum products stored, or at a minimum of once every five years.

## 7.3 Storm Water Pollution Prevention Plans

Jefferson Parish facilities that require coverage under the LPDES Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activities (Permit No. LAR050000) have Storm Water Pollution Prevention Plans (SWP3). An SWP3 describes the various actions a facility will undertake in order to prevent the contamination of storm water runoff. The SWP3 helps identify sources of pollution that may impact storm water quality, and ensures the implementation of practices to reduce pollutants in storm water discharges.

One of the most important factors in developing the SWP3 is the evaluation of alternatives available to a facility to control the contamination of storm water. These alternatives might include administrative actions such as employee training or reporting and inspection procedures; non-structural controls such as sweeping and other good housekeeping practices; or structural alternatives such as secondary containment areas and storm water detention ponds. In order to develop the most cost-effective plan, the various alternatives must be considered for facilities individually, tailoring the facility SWP3 to the needs and requirements of the individual site.

## 7.4 Large Spill Response

A spill is considered large if it is greater than 55 gallons. Spills of hazardous materials, tanker accidents resulting in spills, and spills from bulk storage containers are part of this category. The majority of the

time, the public will report these types of spills through 911. All spills reported to 911 are directed to the Hazardous Materials Unit (HazMat) of the East Bank Fire Department for response and protection of public health and safety by containing and removing the spilled material. While the HazMat Unit of the Fire Department will take the lead, other agencies may be involved in the spill response process. If the spill enters the MS4, Environmental Affairs will be contacted, as warranted by spill, conditions to oversee the cleanup. Large or hazardous spills are normally referred to the Louisiana State Police (225.925.6595) and the Local Emergency Planning Committee (LEPC).

It is difficult to write a procedure to cover all field scenarios that may exist and that consider variables such as site drainage, topography, risk to life and property, nature of hazardous materials, and provide predetermined written conclusions as to the best courses of containment action. However, the HazMat Unit and Department of Environmental Affairs have personnel that are state certified annually at either the technical or professional level. Responders are trained in spill response measures, which involve containing the spill and enacting spill cleanup measures. Additionally, Department of Environmental Affairs' personnel act as first response contacts and containment cleanup advisors for incidents involving hazardous materials that pose an exposure risk to any sewerage, drainage, or water lines. If the spills are on public property, the Haz Mat Unit and Department of Environmental Affairs have a contractor to contain and clean up the spill.

### 7.5 Small Spill Response

The Small Spills category covers oil spills from vehicles, spills from small containers no larger than 55 gallons, and other spills that have not been identified under the definition of large spills. Most spills under this category are associated with citizen complaints, commercial activities or industrial activities.

When a spill is reported through 911 system or by a citizen, it is investigated immediately. The investigator identifies the source of the spill by tracing potential discharge pathways and interviewing available witnesses. If the source is located, the responsible party is required to clean the spill up immediately. If the source is located, enforcement action will be taken against the responsible party in accordance with Jefferson Parish Municipal Code Chapter 16, Article I, Sec 16.9.2: Dumping in catch basins, etc. (see Appendix C). In the case of non-compliance or when the responsible party cannot be identified, the Parish uses a spill cleanup contractor to contain the spill. The Parish contract stipulates that the contractor must respond to a spill within one hour of notification with the appropriate equipment for containing and cleaning the spill.

In the event a spilled material enters the underground storm water collection system, the **Department of Drainage** assists the **Department of Environmental Affairs** to locate the outfall location within the open drainage system for containment and cleanup. The design of the drainage system allows spills to be contained and held in the canals when it is not raining; thereby, preventing the material from reaching the receiving waters. The drainage pump stations operate independently of each other; thus, allowing a pump to run at a different station, if one station is affected by a spill. These pumps can also be used to move the water to a location where it can easily be removed from the drainage system. Temporary earthen dams can also be constructed to contain the material.

### 7.6 Sanitary Sewer Overflow Prevention and Response

This category covers overflows from the sanitary sewer system including ruptured sanitary sewer lines and is the responsibility of the Department of Sewerage. The Department has established a

comprehensive program to prevent and respond to dry and wet weather sanitary sewer overflows. For example, all sewer lines are visually inspected by Department employees. In addition to routine sewer line inspections, all sewerage lift stations are inspected daily. The stations follow a preventative maintenance program that includes mechanical and electrical repairs when needed. Additionally, the Department performs repairs, routine maintenance, and preventative measures on the sewer gravity lines and force mains. A contractor is used for the scheduled long-term sewer line rehabilitation program.

A Supervisory Control and Data Acquisition (SCADA) system is used for responding to and eliminating unforeseen overflows from many of the Parish's sewage lift stations. The SCADA system provides the control operator or dispatcher with detailed information about pump activity, wet well activity, and discrete alarms. Discrete alarms include air compressor, station security, water collection in the dry well, and high ball float. Having access to the current performance of each station allows operators and dispatchers to manage or respond quickly to overflow events.

Procedures for sanitary sewer spill containment are specific to the nature of the spill. For spills from gravity flow mains, the most effective and time responsive method of containing a spill is to rectify the cause. The majority of spills are caused by blockages such as grease or tree root intrusion, which can be fixed relatively quickly following the arrival of a repair crew to the scene of the overflow. Implementation of containment, where it is possible, would often take longer than the repair itself. As such, energy is often focused on the repair.

### 7.7 Measurable Goals

The **Department of Environmental Affairs** is responsible for the following activities during each annual reporting year:

- Conduct industrial facility inspections.
- Respond to spill reports and coordinate with Jefferson Parish Sheriff's Office, Fire Department, the **HazMat Unit**, or other entities when necessary for spill cleanup.
- Use the Parish Emergency Response contractor to cleanup spills in which the responsible party cannot be located or does not cooperate, or spills that occur at Parish facilities.

The **HazMat Unit** is responsible for the following activities during each annual reporting year:

- Respond to large spills and coordinate the spill cleanup with the Louisiana State Police, LDEQ and the Department of Environmental Affairs.
- Use the Parish Emergency Response contractor to cleanup spills in which the responsible party cannot be located or does not cooperate.
- Maintain Tier II/chemical inventory files and assist industry with compliance issues.
- Conduct field compliance inspections, offer training programs about spill prevention and spill handling practices, and respond to spills as the coordinator for product containment, control, and cleanup operations through the Hazardous Materials Coordinator.
- Work closely with the Department of Environmental Affairs and the Parish's cleanup contractor to prevent product flow into sub-surface drainage.

# SECTION 8: INDUSTRIAL AND HIGH RISK RUNOFF

## 8.1 Purpose

The Industrial and High Risk (I&HR) Inspection Program is designed to identify and control pollutants in storm water discharges to the MS4 from industrial and high risk facilities. Program elements include priorities and procedures for inspection activities and monitoring, and maintenance of a list of industrial storm water dischargers to the MS4.

## 8.2 Jefferson Parish Jurisdiction

Jefferson Parish is responsible for all industrial discharges to the MS4 within the unincorporated areas of the Parish. However, Jefferson Parish is not responsible for industrial discharges within the incorporated cities of Gretna, Harahan, Kenner and Westwego.

## 8.3 Process Used to Develop Current List

The following databases were used to properly identify potential I&HR facilities discharging to Jefferson Parish's MS4 and to develop the current list of I&HR facilities subject to inspection:

- List of Toxic Release Inventory (TRI) facilities. The list of facilities was provided by the Louisiana Environmental Protection Agency for the reporting year 2014 (the most current available at the time).
- The Louisiana Department of Environmental Quality (LDEQ) database provided information for facilities with the following permits:
    1. Storm Water General
    2. Hazardous Wastes
    3. Solid Waste
    4. Biosolids
- Database of Businesses in Jefferson Parish maintained by the Jefferson Economic Development Commission

The I&HR Inspection List was developed by collecting information from all the databases mentioned above and entering it into a common database. Facilities that were listed for coverage under the LPDES Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activities (Permit No. LAR050000) were subsequently entered into the I&HR Inspection list. Additionally, municipal landfills; municipal waste treatment, storage, and disposal facilities, such as POTWs; and facilities included in the Toxic Release Inventory (TRI) were also included in the list. The result was a list of 113 facilities located within the jurisdiction of Jefferson Parish. This list is provided in Appendix B.

## 8.4 Procedures for Identification of Additional Facilities

The initial I&HR inspection list is a useful tool for identifying industries that may be subject to the I&HR Inspection Program; however, there may be additional facilities that were overlooked. The following methods are used to identify these facilities:

1. The review of Building Permit Applications allows the Parish to identify new industries before they are built and existing industries that are undergoing renovations. This provides the opportunity to address storm water concerns prior to construction; thereby, enabling the

developer to plan for any treatment devices that may be required. In order to prevent the business from using operational practices which may result in illicit discharges, industries can be inspected and educated about storm water pollution prevention soon after opening.

2. Another method of identification of facilities subject to the I&HR Inspection Program is through the Industrial Pretreatment Program. Facilities that are inspected under the Industrial Pretreatment Program may also have an impact to storm water quality.

3. Citizen complaints have proven to be an excellent resource in the identification of industries with impacts on storm water. The open canal system in the Parish makes it easy for anybody to notice an unusual appearance to the water.

4. Jefferson Parish receives and maintains copies of Public Notices from the LDEQ of industries that have applied for Louisiana Pollutant Discharge Elimination System (LPDES) permits. These industries are inspected to determine if they are subject to the I&HR Program. A list of valid LPDES permit holders is obtained from LDEQ periodically and industries are added to the list, as necessary.

### 8.5 Industrial Surveys of Facilities Currently on the List

The Industry Survey Report is used as a screening tool for industries on the lists submitted to the USEPA on September 1, 1998 to determine if industries are substantial contributors of pollutants to the MS4. Facilities meeting two or more of the following criterion remain on the I&HR inspection list:

- Operational/ Open for Business
- Subject to LDEQ Permit No. LAR050000
- Evidence of illicit discharge

Once the Industry Survey Report has been completed via a phone survey or site visit and meets the designated criteria, it remains in the program and a full inspection is conducted using the I&HR Inspection Checklist and the Jefferson Parish SWP3 Review form. An inspection report is prepared using the Industrial Storm Water Inspection Report. All of these forms can be found in Appendix A. The current list of I&HR facilities is located in Appendix B.

### 8.6 Determination of Unpermitted Facilities

Once a facility is identified as eligible for the I&HR Inspection Program, it is added to the list submitted on September 1, 1998. This list is compared with a list of current LPDES permit holders. Any industry that does not have a current discharge permit from the LDEQ becomes a priority for the I&HR Inspection Program. These industries are the first ones surveyed and inspected, if necessary, to determine if they should be subject to the program and if they need to apply for an LPDES permit. Those industries that are not substantial contributors of pollutants to the MS4 are removed from the program.

### 8.7 Facility Inspection Quantity

There were 250 facilities on the list submitted to the USEPA on September 1, 1998; however, facilities have been added and removed over time. Jefferson Parish has attempted to conduct an Industrial Survey of each industry on the original list and the newly identified facilities. Facilities that are not

substantial contributors are identified during the first inspection and removed from the list for future inspection.

### 8.8 Inspection Prioritization

Facilities identified as Type I and publically owned treatment works, municipal waste treatment, storage and disposal facilities were inspected first. All of these facilities should be covered by either an individual LPDES permit or a Multi-Sector General Permit (MSGP), and they have a high potential to discharge pollutants in sufficient quantities to negatively impact storm water discharges to the MS4.

Facilities that are second in priority for inspection are those identified through a spill incident or complaint. These facilities are often found to have regular sources of discharges that require a storm water permit. After those facilities are addressed, the facilities that do not have any type of permit were surveyed. If they are determined to be a potential substantial contributor of pollutants to the MS4, they will be inspected and advised of their need to apply for a discharge permit. These facilities will remain in the I&HR Inspection Program.

The last group of facilities to be surveyed and/or inspected will be those on the previously submitted list that have valid discharge permits and may be substantial contributors of pollutants to the MS4.

### 8.9 Inspector Training

The surveys and inspections for the I&HR Inspection Program are conducted by the staff of the Department of Environmental Affairs. An initial training session was conducted for the inspectors upon implementation of the program.

The inspectors were trained in proper completion of the Industrial Survey, I&HR Inspection Checklist, and the I&HR Inspection Report. As part of the training, they were taught to recognize potential sources of storm water pollution, and how to determine which industries may be a substantial contributor of pollutants to the MS4.

### 8.10 Inspection Procedure

Inspections under the I&HR Program are generally conducted as follows:

- The investigator will visit the site.
- The investigator will complete a site inspection. Activities to be completed during the inspection will differ from site to site and will be left to the professional judgment of the investigator but may include:
  - The completion of an inventory of potential pollutants stored on site
  - The completion of an inventory of processes that may result in the contamination of surfaces exposed to rainfall, and processes that may result of discharges of non-storm water to the ground or onsite drainage systems
  - An inspection of all storm drains located on the site to identify any current or past discharges to storm drainage systems
  - The inspection of site drainage so that it can be determined whether any part of the site affected by the industrial activity drains to the MS4
  - A risk assessment of the storage of potential pollutants to determine whether adequate secondary containment is provided

- An assessment of processes to determine whether the facility is likely to have an impact on the quality of storm water runoff; including waste disposal, storage practices
- Photographic documentation of site conditions as necessary

- The results of the inspection will be recorded.
- The results of the inspection will be explained to the person in charge of the site along with any enforcement actions that will result from the inspection.
- Where significant violations are noted at the site, the investigator will issue a Notice of Violation. The inspector will make a follow-up visit to ensure that the violation has been corrected.
- Where no significant violations exist, the investigator will notify the person in charge that the inspection is finalized.
- The Inspector will document the inspection.

### 8.11 Measurable Goals

The **Department of Environmental Affairs** is responsible for the following activities during each annual reporting year:

- Maintain a list of facilities in the Parish that discharge to the MS4 and have an LPDES permit.
- Update the current list of I&HR facilities within Jefferson Parish jurisdiction annually.
- Complete Industry Survey Reports for facilities on the I&HR Program List found in Appendix B.
- Once during the five-year permit, conduct an inspection of Type I facilities on the current I&HR Program List. Type II facilities on the current I&HR Program List will be inspected as warranted based on the criteria for inspection outlined in the Industry Survey Report.

# SECTION 9: CONSTRUCTION SITE RUNOFF

## 9.1 Introduction

This Construction Site Inspection (CSI) Program has been prepared in accordance with the National Pollutant Discharge Elimination System (NPDES) Permit requirements. This CSI Program has been prepared to assist in the notification procedures and training of Jefferson Parish staff in the inspection of construction sites disturbing one or more acres of land. This section provides background information on the regulatory aspects of controlling storm water pollution from construction sites as well as general requirements of the CSI Program as determined by the final LPDES Permit issued to the Jefferson Parish Municipal Separate Storm Sewer System (MS4).

## 9.2 Jefferson Parish Jurisdiction

Jefferson Parish is responsible for the inspection of construction sites within unincorporated areas of Jefferson Parish. The incorporated cities of Gretna, Harahan, Kenner, and Westwego are responsible for the development and implementation of their individual programs.

## 9.3 Jefferson Parish Public Works Projects

The responsibility for obtaining the proper permit documentation for all Parish projects remains with the Department(s) initiating the construction project. The Department(s) responsible for new construction projects is (are) required to make contractors of projects with a common plan of development of one (1) acre or greater aware of the requirement to obtain coverage under the Construction Sites General Permit. If a storm water permit is deemed necessary during the planning phase (typically for sites encompassing five acres or greater), then a Notice of Intent (NOI) and a Notice of Termination (NOT) will be submitted to the Louisiana Department of Environmental Quality (LDEQ) with a copy sent to the Department of Environmental Affairs prior to any clearing and grubbing activities. Construction sites between one and five acres are automatically covered under an LPDES permit and no NOI or NOT is necessary.

A Storm Water Pollution Prevention Plan (SWP3) is developed and implemented to maintain compliance during the construction phase of the project. The Department of Environmental Affairs is available to assist in the development of the SWP3. The Department(s) responsible for a new construction project will make the determination to either develop the SWP3 internally or to include it as part of the contract with its design consultant. The SWP3 is included in the Contract Documents of the project which also outline the contractor's responsibility to implement and maintain documentation in the SWP3 throughout the duration of the construction phase.

## 9.4 Private Projects

A Building Permit is required for all developers/contractors prior to commencing construction activities. Jefferson Parish utilizes building permits as the primary source of information to the applicant in determining the required permits (e.g. storm water permit). The Building Permit Division of the Department of Inspection and Code Enforcement provides an application package to each applicant including permit requirements, the Department of Environmental Affairs' Building Permit Plan Review

Form (see Appendix A) and the different departments that could be involved during the permit review process. The primary departments involved during the permit review process are:

1. Department of Inspection and Code Enforcement
2. Department of Environmental Affairs
3. Fire Department
4. Department of Public Works
5. State Fire Marshal
6. Louisiana Department of Health and Hospitals

The Department of Inspection and Code Enforcement does not issue a Building Permit until receiving approval from all departments involved in the review process. Upon the developer/contractor's request, the Department of Inspection and Code Enforcement may arrange a pre-construction meeting between the engineer and/or contractor and representatives from all the applicable Parish Departments (e.g. Planning, Inspection and Code Enforcement, Public Works, Fire Department, Engineering, Environmental Affairs, etc).

A Department of Environmental Affairs representative attends the pre-construction meeting to provide information and guidance to the developer/contractor regarding storm water regulations. The Department of Environmental Affairs is responsible for notifying applicants of storm water regulations and has developed a Building Permit Plan Review Form, included in Appendix A, for inclusion with the Building Permit application package.

### 9.5 Inspection Procedures

The CSI Program for storm water pollution control is administered and implemented by the Department of Environmental Affairs. The Department distributes a list of suggested BMPs to the applicant, but do not require the use of specific control measures by the contractor or consultant. Upon the applicant's request, Department personnel may provide alternatives available to control and reduce impacts of storm water runoff.

Department of Environmental Affairs personnel complete the Construction Site Inspection Report and a Construction Site Inspection Checklist during each inspection visit. A copy of the Inspection Report Form and Construction Site Inspection Checklist is included in Appendix A. The checklist identifies the most common sources of construction site pollution.

During the initial construction site inspection, the inspector meets with the construction project superintendent, the individual in charge of the site, and the person(s) responsible for the implementation and maintenance of construction site BMPs. Additionally, the Department of Environmental Affairs personnel and the person(s) in charge of the SWP3 confirm the following information:

- Total area to be disturbed by the construction project
- Construction timing and phasing
- Sources of potential storm water contamination (e.g. storage areas)
- Best Management Practices
- LPDES permit
- Outfall location and receiving waters

After completing the interview with the designated person(s), a site tour and inspection is conducted by the Department of Environmental Affairs representative. The representative will identify any deficiencies or recommend additional practices, either structural or non-structural, which could reduce the amount of pollutants that could enter the MS4.

The Department representative focuses primarily on sediment and erosion control practices and the proper storage and use of chemical products. During the initial visit, the representative emphasizes that sediment and floatable items must not enter the MS4. Construction site entrances are identified and inspected for evidence of mud being tracked into the street. All existing and newly installed drainage infrastructure is inspected for sufficient protection. The Department representative inspects the solid waste collection area, site housekeeping, and the storage of oil-based and other products with the potential to enter the drainage system (e.g. cement mixer washout, concrete curing compound, muriatic acid or solvents).

During this initial site inspection, the inspector acquires information requested on the checklist; identifies and documents areas where BMPs may be needed; and when necessary, gives the superintendent a deadline for installing additional measures (e.g. specific areas that the inspector has identified sediment or pollutants are leaving the project site and entering the MS4 or the street). The inspector makes subsequent inspection visits to the site to determine whether BMPs have been implemented and are working properly.

Department of Environmental Affairs personnel conduct inspections of construction sites one acre or greater. If coverage under the general LPDES permit has not been obtained, Department of Environmental Affairs personnel will supply the superintendent with a copy of the state regulations, a set of NOI forms, a Jefferson Parish construction pollution prevention plan form, and, possibly, a copy of the EPA booklet, “Storm Water Management For Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, Summary Guidance.” Department of Environmental Affairs personnel will also explain the process of SWP3 development and offer to review the draft SWP3 and provide comments/suggestions.

### 9.6 Enforcement

Any construction project disturbing one or more acres of land is covered by state regulations. Once information is provided and inspections are performed, if a construction site remains noncompliant with the necessary requirements, Department of Environmental Affairs reports the construction project to Louisiana Department of Environmental Quality for further review and enforcement action.

### 9.7 Personnel Training

The Department of Environmental Affairs periodically conducts training for personnel that perform construction site inspections. The training program addresses:

- Pollution Control Laws and Regulations
- Construction Site Run-off Pollution Prevention Practices
- Development of Storm Water Pollution Prevention Plans

The Department of Environmental Affairs also participates in storm water related construction site trainings in conjunction with other co-permittees and the Louisiana Urban Storm Water Coalition. These interactive workshops train contractors, engineers, architects, landscape architects, inspectors, and other agency personnel to navigate water quality regulations and permit requirements for construction sites. Additionally, information is provided regarding inspection/ enforcement action and hands-on group exercises in preparing an SWP3 is available. The Department of Environmental Affairs will provide one, four-hour training class per year for the inspection staff.

### 9.8 Recordkeeping

Copies of the inspection reports and SWP3s are kept by the Department of Environmental Affairs until final stabilization of the construction project, and the Notice of Termination has been filed. Other events that are documented and kept on record include significant changes in on-site activities and significant storm water pollution events (e.g. spills or failure of BMPs). In addition, the contractor is required to maintain a copy of the SWP3 on-site at all times.

### 9.9 Measurable Goals

The **Department of Environmental Affairs** is responsible for the following activities during each annual reporting year:

- By 2016-2017, develop an Erosion and Sediment Control Ordinance to regulate runoff of sediment from construction sites in the unincorporated areas of Jefferson Parish.
- Conduct inspections of construction sites that are one acre or greater.
- The Department of Environmental Affairs will provide one, four-hour training class per year for the inspection staff.
- Provide assistance to Parish staff in developing SWP3s for Parish construction projects.

# SECTION 10: PUBLIC EDUCATION

## 10.1 Nonpoint Source Pollution and Solutions Poster/Essay Contest

The Nonpoint Source Pollution and Solutions Poster/Essay Contest promotes, publicizes, and facilitates proper use, management and disposal of household hazardous wastes (HHW). The Department of Environmental Affairs has sponsored the contest annually for students in the 3rd through 8th grades in all schools in Jefferson Parish since the 1998-1999 school year. Students in Grades 3 through 6 submit a poster about nonpoint source pollution prevention. Students in Grades 7 and 8 submit an essay identifying nonpoint source pollutant generators and prevention strategies. The goal of the contest is to educate students and parents about the importance of keeping HHW, and other wastes, out of the MS4. Emphasis is placed on the importance of keeping waste oil, paint, pesticides and other chemicals out of the storm drainage system.

The Awards Banquet features a presentation to students, parents and faculty by a representative from an environmental organization, such as the Louisiana Department of Environmental Quality, Louisiana Department of Natural Resources Coastal Management Division, Lake Pontchartrain Basin Foundation, or the Barataria Terrebonne Estuary Program, about environmental and stormwater issues. Trophies are awarded to 1st, 2nd and 3rd place winners and certificates are awarded to honorable mentions. The winning posters and essays are displayed in two Jefferson Parish Regional Public Libraries, one on the East Bank and one on the West Bank.

## 10.2 Enviroscape Storm Water Module Demonstrations

The Parish educates citizens about the prevention of litter and storm water pollution by participating in a number of public education events annually. The Department of Environmental Affairs staffs educational booths at events such as Senior Citizen Day and Jefferson Beautification Inc. Earth Day. At all of these booths, the Enviroscape Storm Water module is used to demonstrate sources of pollution in urban runoff. The Enviroscape Storm Water module is also used as a learning tool during guest speaking events at elementary and middle schools within the Parish.

## 10.3 Sewer Science Program Workshops

Sewer Science is a high school laboratory program that teaches students the science of wastewater treatment by simulating plant operations such as primary clarification, biological secondary treatment and filtration. Jefferson Parish conducts Sewer Science Program workshops to educate local high school students about water quality monitoring and wastewater treatment processes. This program is a long-term effort that spans multiple sessions and is conducted at one or two local high schools annually.

## 10.4 Christmas Tree Collection and Marsh Restoration

Jefferson Parish conducts a Christmas Tree Collection and Marsh Restoration event every January. Residents of unincorporated Jefferson Parish and the Town of Jean Lafitte are asked to place their trees on the curb for collection. Parish trucks collect the tress and deliver them to the Marsh Restoration Project. At the restoration event, volunteers use boats to place trees into pre-constructed shoreline fences in Goose Bayou, near the Town of Jean Lafitte.

### 10.5 Storm Drain Marking Program

The Parish Storm Drain Marking Program promotes, publicizes and facilitates public reporting of the illicit discharges. The Jefferson Parish Department of Environmental Affairs administers the program that recruits volunteers to apply polyurethane markers to storm drain inlets and catch basins with messages such as, "No Dumping Flows to Lake Pontchartrain" on the East Bank of the Parish and "No Dumping Flows to Coastal Wetlands" on the West Bank of the Parish. Both markers warn of a potential fine of up to $5,000 and include the Department of Environmental Affairs' telephone number to report any suspicious dumping activities. This program reminds citizens that it is illegal to dispose of any materials in the MS4, including HHW, grass clippings, leaves, and pet wastes.

### 10.6 Drop-off Recycle Sites for Waste Automotive Fluids, Tires, Batteries and Electronic Waste

Jefferson Parish operates drop-off recycling sites at two trash drop-off sites, one on each side of the Mississippi River, to facilitate the proper management, disposal and recycling of used motor vehicle fluids. These recycling sites, which have been in operation since the early 1990s, allow residents to drop-off used motor oil, antifreeze, gasoline, automotive batteries and tires for recycling. The facilities also accept non-hazardous solid waste, such as garbage, construction and demolition waste, cut grass, tree limbs and white goods. These drop-off sites are available to all citizens of Jefferson Parish, including the municipalities.

In December 2014, Jefferson Parish implemented a used cooking oil recycling service at two drop-off sites. Each site contains a 250 gallon container that receives waste cooking oil to be recycled by the All American Grease Company.

Jefferson Parish has a contract to accept electronic waste. Collection is anticipated to begin this year at the two drop-off locations.

The used motor oil, antifreeze, and gasoline recycling program and operation of the drop-off sites is promoted regularly in newspaper ads, mail-outs, water bill inserts and through community presentations. The Parish also provides the public with information regarding the proper identification and disposal of HHWs that are distributed via utility bills and public service announcements.

### 10.7 Household Hazardous Waste and Electronic Waste Collection

Jefferson Parish holds a Household Hazardous Waste (HHW) collection event as funds allow. During this event residents can drop off their household products that contain corrosive, toxic, ignitable, or reactive ingredients and they will be properly disposed of by the Parish. Items accepted include mercury-containing equipment, paint, lawn and garden products, household cleaning products, lighting components and electronic waste.

### 10.8 Residential Reuse, Recycle and Disposal Guide

The Parish provides a *Residential Reuse, Recycle and Disposal Guide* to citizens promote the proper use, management, disposal and/or recycling of HHWs, pesticides, herbicides, and fertilizers. Specific HHWs covered in this guide include expired medications, nickel-cadmium batteries, used syringes, air conditioners and refrigerators, latex paint, oil-based paints and solvents, gasoline and diesel fuel, used motor oil and antifreeze, car and truck batteries, computer components and monitors, fluorescent lamps, mercury, and pesticides/herbicides. This document provides guidance to residents about best

management practices and specific listings of outlets for the proper disposal, reuse and recycling of these materials. Disposal outlets included in the guide are the Parish's two (2) Drop-off Recycling Sites and local recyclers.

The guide is available to all Jefferson Parish residents, including municipalities, through the Department of Environmental Affairs in print and online. Printed copies of the guide are distributed via mail-outs, presentations and by request. Inquiries regarding the disposal/recycling of HHW are directed to the Department of Environmental Affairs. Depending on the particular waste, citizens are either informed of procedures necessary for approved disposal in the municipal garbage, the locations of available drop-off sites, or given contact information for those businesses known to receive such waste.

### 10.9 Community Litter Pickup Events

Jefferson Parish participates in several community litter pick up events each year, such as the Lake Pontchartrain Basin Foundation Beach Sweep, Lake Pontchartrain Basin Foundation Spring Sweep, Leaders again Litter, and "Stop the Trash". The Department of Environmental Affairs organizes some events and assists with the coordination for others. The Parish's involvement can range from providing supplies (i.e. gloves, trash bags, safety vests) and furnishing equipment to passing out educational materials. Parish staff have also provided safety instructions for all participants and picked up the litter with event volunteers.

### 10.10 Measurable Goals

The **Department of Environmental Affairs** is responsible for the following activities during each annual reporting year:

- Organize and implement the annual Municipal Storm Water Public Education-Poster-Essay Contest.
- Conduct 5 Enviroscape class visits for Parish schools to increase public awareness about storm water pollution prevention.
- Conduct sewer science workshops at two (2) local high schools.
- Provide stormwater education materials at area festivals.
- Mark a minimum of 20 storm drains through the Storm Drain Marking Program with a distribution as close to equal as possible between the East Bank and West Bank.
- Conduct community demonstrations or lectures about storm water quality and management upon request by civic and community groups.
- Distribute educational materials regarding various storm water management topics to Jefferson Parish customers.
- Provide a telephone number for residents to call to report illicit discharges.

# SECTION 11: REPRESENTATIVE MONITORING PROGRAM

The Representative Monitoring Program includes the Dry Weather Screening Program, the Wet Weather Screening Program, and the Industrial and High Risk Runoff Monitoring Program.

## 11.1 Dry Weather Screening Program

Jefferson Parish submitted the Dry Weather Screening Program as part of the Illicit Discharge Program to the USEPA on March 1, 1999, in accordance with the permit implementation schedule (LPDES Permit Table III.A). Under its Dry Weather Screening Program, the Parish screens five basins annually – one (1) commercial location, two (2) industrial locations and two (2) residential locations.

The Department of Environmental Affairs conducts a Dry Weather Screening program at outfalls in the open canal system. The program focuses on screening for illicit discharges at outfalls during dry weather conditions (less than 0.1 inches of rainfall per 24 hours for the preceding 72 hours) to increase the chances that any observed flow is more likely to be associated with an illicit discharge. The goal of the program is to identify and eliminate any unpermitted illicit discharges to the MS4. At each outfall where flow is identified, it is investigated immediately in an attempt to locate the source resolve the issue.

Dry weather screenings will be completed in accordance with the following procedure:

- A designated staff member from Environmental Affairs identifies an outfall.
- Where no flow is noted, the screening is considered valid and the screening location is recorded. Then, the staff member moves to the next outfall.
- Where flow is noted, the staff member will complete a field assessment that may include the following water quality parameters: pH, temperature, conductivity and/or fecal coliform.
- If samples are collected for laboratory analysis, they will consist of manual grab samples, collected at the outlet point of the outfall. Where significant flow exists, the grab sample should be taken from the horizontal and vertical center of the flow. Samples will be collected into appropriate containers and care shall be taken so as to prevent contamination of the inside of the sample bottle. Samples shall be kept free of uncharacteristic floating debris. Fecal coliform samples must be collected and remain in the original container, stored in a cooler with ice and delivered to the laboratory within six hours for testing. Sampling and field analysis equipment shall be adequately cleaned prior to commencing sampling and field analysis at another outfall.
- Field samples shall be analyzed in accordance with equipment manufacturer's instructions.
- Where field observation or testing identifies conditions inconsistent with standards set forth in Jefferson Parish Municipal Code Chapter 16, Article I, Sec 16.9.2: Dumping in catch basins, etc.; special fine, the staff member will attempt to confirm the source.
- Following correct storage of any samples, the staff member will begin a survey of the drainage system upstream of the outfall in an attempt to locate the source of the flow.
- If a source is identified, where possible, the staff member will take photos of the source and collect basic information regarding the date, time, location, nature and individual(s) involved in the discharge. Further action may be taken under Jefferson Parish Municipal Code Chapter 16, Article I, Sec 16.9.2: Dumping in catch basins, etc. following the steps in Section 6.2: Investigation of this SWMP.
- Results of all field screening will be recorded on the Dry Weather Screening Form (Appendix A).

## 11.2 Wet Weather Screening Program

The certification for the implementation of the Wet Weather Screening Program was submitted to the USEPA on April 1, 1998. Under its Wet Weather Screening Program, the Parish screens five basins annually – one (1) commercial location, two (2) industrial locations and two (2) residential locations.

The Department of Environmental Affairs conducts a Wet Weather Screening program at outfalls in the open canal system. The program focuses on screening for illicit discharges at outfalls during wet weather conditions. The goal of the program is to identify and eliminate any unpermitted illicit discharges to the MS4 by detecting changes in or abnormal discharges from outfalls to the open canal system. Outfalls that appear to have non-storm water discharges due to inconsistencies in odor, color or other non-point source pollutant identifiers will be investigated for illicit discharge following the steps in Section 6.2. As part of this program, Jefferson Parish will annually screen outfalls in commercial, residential and industrial areas.

## 11.3 Industrial and High Risk Monitoring Program

The Industrial and High Risk Facilities (I&HR) Monitoring Program identifies and describes practices and procedures employed by Jefferson Parish to reduce the discharge of pollutants to the MS4 from industrial and high risk facilities. The Program monitors storm water discharges from Type 1 and 2 facilities which discharge to the MS4. The list of eligible facilities is generated using the procedure outlined in Section 8: Industrial and High Risk Runoff.

Jefferson Parish submitted the Industrial and High Risk (I&HR) Monitoring Program by June 1, 2001, in accordance with the prior permit implementation schedule (LPDES Permit Table III.A). The Parish is responsible for industrial discharges to the MS4 within the unincorporated areas of the Parish. However, Jefferson Parish is not responsible for industrial discharges within the incorporated cities of Gretna, Harahan, Kenner, and Westwego.

### 11.3.1 Type 1 Facilities

Type 1 facilities are defined as municipal landfills; hazardous waste treatment, disposal, and recovery facilities; industrial facilities that are subject to EPCRA Title III, Section 313 (also known as the Toxic Release Inventory (TRI)); and industrial facilities that have been identified as contributing a substantial pollutant loading to the MS4. Type 1 facilities must monitor for the following parameters:

1. Any pollutants limited in an existing LPDES permit for a subject facility
2. oil and grease
3. chemical oxygen demand (COD)
4. pH
5. biochemical oxygen demand, five-day (BOD5)
6. total suspended solids (TSS)
7. total phosphorous
8. Total Kjeldahl Nitrogen (TKN)
9. nitrate plus nitrite nitrogen
10. any information on discharges required under 40 CFR 122.21(g)(7)(iii) and (iv)

The frequency of monitoring is determined on a case-by-case basis after a facility inspection to familiarize Parish personnel with the sources and volumes of all waste streams discharged to the MS4. The Parish may also alter the monitoring requirements for individual Type 1 facilities as follows:

1. to coincide with the corresponding industrial sector-specific monitoring requirements of the Louisiana Multi-Sector General Permit (MSGP).
2. to coincide with the monitoring requirements of any individual permit for the storm water discharges from that facility.

The optional monitoring list must be supplemented by any pollutants of concern identified by the copermittees for that facility. Jefferson Parish allows facilities currently holding permits to alter the monitoring requirements as described above. The monitoring is self-monitoring unless the Parish has reason to suspect additional monitoring requirements may need to be established. In these instances, the Parish may collect samples and determine if the additional monitoring requirements are warranted. All self-monitoring results are reported to the Parish at a frequency to be determined for each individual facility and they must be submitted on the I&HR Self-Monitoring Report Form (Appendix A).

### 11.3.2 Type 2 Facilities

Type 2 facilities are municipal waste treatment, storage, or disposal facilities (e.g. public owned treatment works, transfer stations, or incinerators); and industrial or commercial facilities the copermittees believe are contributing pollutants to the MS4. Monitoring requirements for Type 2 facilities can be met by conducting visual monitoring at a frequency established by Jefferson Parish and completing the Visual Monitoring Checklist (see Appendix A). For example, the Jefferson Parish Wastewater Treatment Facilities (WWTFs) use the self-monitoring program to meet Type 2 facility requirements. WWTF personnel conduct the monitoring quarterly and then archive the documentation at the facility.

### 11.3.3 No Exposure Certification

In lieu of analytic monitoring, Jefferson Parish may accept a certification from a facility that the raw and waste materials, final and intermediate products, by-products, material handling equipment or activities, industrial machinery or operations, or significant materials from past industrial activity are not presently exposed to storm water and are not expected to be exposed to storm water for the certification period. When Jefferson Parish accepts a “no exposure” certification, one site visit will be conducted during the permit term to verify the facility’s “no exposure” exemption.

## 11.4 Canal Sampling

The Department of Environmental Affairs also performs canal sampling bi-annually, in the spring and in the fall. The results of this voluntary sampling are used as an indicator for the stormwater management program, helping to identify any problematic areas within the Parish.

## 11.5 TMDL/303(d) Listed Streams

LDEQ conducts water quality monitoring to identify and list "impaired" waterbodies on the 303(d) List. Once a waterbody has been identified as "impaired" a Total Maximum Daily Load (TMDL) is developed with a Waste Load Allocation (WLA) to help control the amount of pollution entering the waterbody and ultimately return it to a non-impaired status. Jefferson Parish is required to conduct discharge monitoring for waterbodies where either a TMDL is complete and a WLA as been established for the discharges from the MS4, or where there are discharges to 303(d) listed streams with an impairment identified as caused by MS4s. At this time, Jefferson Parish has not been able to identify any WLAs or 303(d) listed streams that meet this criteria. Jefferson Parish will conduct an annual review of current, EPA-Approved TMDLs, WLAs and 303(d) listed streams, and determine if any waterbodies have been added that require the monitoring outlined in the Permit. Once a waterbody has been identified, Jefferson Parish will modify the SWMP to incorporate the monitoring protocols and results.

## 11.6 Allowable Non-Storm Water Discharges

In 1998 Jefferson Parish submitted to the Environmental Protection Agency a list of the categories of non-storm water that are not prohibited from being discharged into the MS4. This list has been reviewed as part of this SWMP and is included in Appendix B.

## 11.7 Measurable Goals

The **Department of Environmental Affairs** is responsible for the following activities during each annual reporting year:

- Continue implementation of the three elements of the Representative Monitoring Program (Dry Weather Screening Program, Wet Weather Screening Program and I&HR Monitoring Program) to determine the characteristics of urban runoff in different land use categories.
- Perform canal sampling bi-annually.
- Conduct an annual review of LDEQ TMDLs, WLAs and 303(d) listed streams to identify newly listed waterbodies within the jurisdiction of Jefferson Parish.

# SECTION 12: POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

## 12.1 Program Overview

The Pollution Prevention/ Good Housekeeping Program has developed and implemented operation and maintenance practices to prevent or reduce pollutant runoff from municipal operations. Under this program, employees are trained to prevent and reduce storm water pollution from park and open space maintenance, fleet and building maintenance, new construction/land disturbances, storm water system maintenance and other Parish functions that could negatively impact storm water quality. Additionally, the program defines appropriate best management practices (BMPs) for pollution prevention/good housekeeping in municipal operations and assigns performance measures for each BMP.

## 12.2 Spill Prevention

Jefferson Parish facilities and departments engage in spill prevention by implementing administrative, structural and non-structural best management practices and control measures. For many Parish facilities including wastewater treatment plants, water treatment plants, trash drop-off and recycling centers, landfills, drainage pump stations, and vehicle maintenance facilities, the guidelines for the development and implementation of such BMPs and control measures are provided in Spill Prevention, Control and Countermeasure (SPCC) Plans and Storm Water Pollution Prevention Plans (SWP3). The Department of Environmental Affairs initiates and reviews all updates to SWP3s and SPCC Plans for Parish facilities. The department also identifies facilities that require new plans and manages plan development.

The Department of Environmental Affairs conducts inspections of Jefferson Parish facilities that could potentially impact storm water quality. The municipal inspections are conducted in the same manner as the I&HR facility inspections with the purpose to identify and eliminate the discharge of pollutants from these facilities. See Section 8.10 for specific inspection procedures.

## 12.3 Training

Jefferson Parish will conduct annual training for employees with job responsibilities that may impact storm water quality. Topics of the training may include the following:

- Basics of storm water pollution prevention
- Use of spill cleanup equipment
- Proper waste disposal methods
- Inspection and identification of facilities for potential storm water hazards
- Facility specific operational best management practices

## 12.4 Measurable Goals

The **Department of Environmental Affairs** is responsible for the following activities during each annual reporting year:

- Provide training to Parish employees to reduce and eliminate storm water pollution from Parish activities.

- Develop and/or update SWP3 and SPCC Plans for designated facilities and train personnel on the plans.
- Conduct municipal storm water inspections at Jefferson Parish facilities described in Section 12.2 once per permit term.

# SECTION 13: GREEN INFRASTRUCTURE/LOW IMPACT DEVELOPMENT

## 13.1 Program Overview

The goal of the Jefferson Parish Green Infrastructure/Low Impact Development program is to promote development that utilizes sustainable stormwater management. The program will help avoid water quality degradation and reduce flooding potential caused by increased stormwater runoff rates. Ultimately, the water quality will be increased in the receiving waters of the MS4.

## 13.2 Review of Construction Development Requirements

Jefferson Parish will complete a thorough review of the existing codes and ordinances, assessing the requirements for landscaping and buffering and for enforcement of zoning regulations. Audit tools, such as the Center for Wastershed Protection's Better Site Design Codes and Ordinances Worksheet and the EPA's Water Quality Scorecard, will assist in identifying provisions that do not support the green infrastructure and low impact development practices. These provisions will be amended as necessary to integrate the principles of green infrastructure and provide the flexibility that will facilitate green infrastructure and low impact approaches to development.

Until the review has been completed, interim development standards pertaining to landscaping and zoning have been defined that will begin to implement green infrastructure and low impact development requirements.

## 13.3 Design Guidelines

Design guidelines will be prepared to assist developers in implementing green infrastructure into their design. Changes to the codes and ordinances will be highlighted and examples of green infrastructure and low impact practices will be included. The guidelines will be provided to developers and/or persons requesting a building permit so they can be considered early in the design process. They will also be provided to Jefferson Parish departments for use in any of their upcoming projects.

## 13.4 Training

Training will be provided to Jefferson Parish departments to explain the importance of green infrastructure and low impact approaches on stormwater pollution prevention. Amended ordinances will be reviewed and examples will be provided of how green infrastructure and low impact practices can be integrated into new development and re-development projects. This training will provide Jefferson Parish with the tools needed to implement the green infrastructure and low impact development program.

## 13.5 Measurable Goals

The **Department of Environmental Affairs** and the **Planning Department** are responsible for the following activities during the 5-year permit term:

- Complete study of current codes and amend as required to remove impediments to, and encourage, green infrastructure and low impact development.

- Compile a packet with Green Infrastructure/Low Impact Development Design guidelines to provide to developers.
- Provide training to Jefferson Parish personnel on Green Infrastructure/Low Impact Development program.
- Encourage integrated, low-impact stormwater management design that uses green infrastructure through the subdivision plat or site plan review process.

## APPENDIX A: FORMS

1. Industrial Storm Water Inspection Report
2. Automotive Inspection Form
3. Construction Site Inspection Report
4. Construction Site Inspection Checklist
5. Screening of Stormwater Outfalls Inspection Report
6. Industrial Survey Report
7. I&HR Inspection Checklist
8. Jefferson Parish SWP3 Review Form
9. I&HR Self-Monitoring Report Form
10. Visual Monitoring Checklist
11. Pesticide Application Inspection Report
12. Building Permit Plan Review Form
13. Complaint Reporting Form
14. Phone Long
15. Construction Activities Violation Notice
16. Construction Activities Courtesy Notice
17. Illegal Dumping Violation Notice
18. Illegal Dumping Courtesy Notice
19. Waste Water Violation Notice
20. Waste Water Courtesy Notice
21. Storm Drain Marker Request and Information Form
22. Jefferson Parish Storm Water Program Color Brochure
23. Storm Water Runoff Control at Construction Sites Brochure
24. Leaf Blowing Brochure

**INDUSTRIAL STORM WATER INSPECTION REPORT**
**Jefferson Parish Environmental Affairs**

**Industry Name**:

**Address**:

**Phone**: **Fax:**

**Zone**: **Basin:**

**Date**: **IU**: Stormwater ☒ Sig. Cat. ☐ Sig. Minor ☐

**Time**:

**Unannounced**: ☐ **Announced**: ☐

**Initial**: ☐ **Follow-up**: ☐

**Person(s) contacted and titles**:

**Inspectors:**

**Company's SIC #(s)**: **NAICS Code#(s):** **AI#**:

**Jefferson Parish Wastewater Discharge Permit**: Yes ☐ No ☐

**LA State Permit**: Yes ☐ No ☐

**EPA Hazardous Waste Generator ID#:**

**NPDES Permit**: Yes ☐ No ☐

**LPDES Storm Water Permit** Yes ☐ No ☐

**Number of days business operates**: **Hours of operation**:

**Continuous**: Yes ☐ No☐

**INDUSTRIAL STORM WATER INSPECTION REPORT**
**Jefferson Parish Environmental Affairs**

**Description of operations at facility:**

**List and describe activities that are exposed to storm water:**

**Describe any non-storm water discharges to the storm water drainage system or the ground surface, e.g., non-contact cooling water, process wastewater, etc.:**

**Does the facility have impervious secondary containment where required?** Yes ☐ No ☐
(If yes, describe the location of the secondary containment, if it is covered or uncovered, etc.)

**Are there any open drums or container that exposed to rainwater?** Yes ☐ No ☐
(If yes, describe the location of the secondary containment, if it is covered or uncovered, etc.)

**Is there evidence that a spill(s) occurred?** Yes ☐ No ☐
(If yes, describe the appearance and material spilled.)

**Does the facility have a spill cleanup kit on site?** Yes ☐ No ☐
(Describe contents and location.):

**Is there evidence of leaking vehicles and/or equipment on site?** Yes ☐ No ☐
(Describe):

**Is there litter, debris, or other solid materials that may enter the storm water drainage system on site:** (describe)
Yes ☐ No ☐

**Is the facility practicing good housekeeping** Yes ☐ No ☐
(if no, describe):

**Are waste storage areas clean and well maintained** Yes ☐ No ☐
(describe):

**Are vehicles and/or equipment washed on site** Yes ☐ No ☐
(If yes, give a detailed description of the flow of wastewater):

**INDUSTRIAL STORM WATER INSPECTION REPORT**
**Jefferson Parish Environmental Affairs**

**Identify problems encountered:**

**Miscellaneous notes:**

**Recommendations for further action**: Yes ☐ No ☐
(If yes, give a detailed description.)

**Report completed by**:

**Name:** _____ **Date:**
Title

**Report reviewed by**:

**Name:** _____ **Date:**
Sami Khalil, Storm Water Management Supervisor

**Plans to Ask Facility Representative for a Copy Of :**

1. **SPCC Plan - (Spill Prevention and Countermeasure Plan)**
2. **SWP3 – Storm Water Pollution Prevention Plan**
3. **Tier I or Tier II Plan - (if applicable, lists all chemicals etc. stored at facility for local Fire Marshall/Department)**

**Storm Water Management**
**Jefferson Parish Department of Environmental Affairs**

# SERVICE STATION / AUTOMOTIVE REPAIR SHOP/AUTO SALVAGE YARD INSPECTION REPORT

## A. General Information:

Service Station: ☐ Automotive Repair Shop ☐
Date:
Facility Name:

Location:

Phone:

Person (s) Contacted:
Title:

By Staff Member (s):

NPDES Yes ☐ No ☐
LAPDES Yes ☐ No ☐
AI# SIC Code:

***ZONE:*** ***Basin:***

## B. Repairs

Are repairs performed outside? ☐ Yes ☐ No
If yes, what types of repairs:

Are these repairs the source of potential pollutants to stormwater? Yes ☐ No ☐

## C. Spill Clean-Up

Describe methods employed to clean-up spills and/or leaks (if wet, where does wastewater flow; if dry, how is absorbent disposed of):

Does the facility have a written Spill Prevention Control and Countermeasure (SPCC) plan? Yes ☐ No ☐

## D. Wastewater Information

| | | |
|---|---|---|
| Floor Drains | Destination:<br>Sewer ☐<br>Storm Drain ☐<br>Other ☐<br>Unknown ☐<br>No Floor Drains ☐ | |
| | Treatment<br>Grit Trap ☐<br>Oil/Water Separator ☐<br>Other ☐<br>No Treatment ☐ | |
| | How often is treatment system cleaned | |
| | Company that cleans treatment system | |
| Service Bays | Destination:<br>Sewer ☐<br>Storm Drain ☐<br>Other ☐<br>Unknown ☐<br>No Service Bays ☐ | |
| | Treatment<br>Grit Trap ☐<br>Oil/Water Separator ☐<br>Other ☐<br>No Treatment ☐ | |
| | How often is treatment system cleaned | |
| | Company that cleans treatment system | |
| Gas Island Cleanup | Destination:<br>Sewer ☐<br>Storm Drain ☐<br>Other ☐<br>Unknown ☐<br>No Cleanup ☐ | |
| | Treatment<br>Grit Trap ☐<br>Oil/Water Separator ☐<br>Other ☐<br>No Treatment ☐ | |
| | How often is treatment system cleaned | |
| | Company that cleans treatment system | |

| | | |
|---|---|---|
| Commercial Car Wash/ Detailing | Destination:<br>Sewer ☐<br>Storm Drain ☐<br>Other ☐<br>Unknown ☐<br>No Car Wash ☐ | |
| | Treatment<br>Grit Trap ☐<br>Oil/Water Separator ☐<br>Other ☐<br>No Treatment ☐ | |
| | How often is treatment system cleaned | |
| | Company that cleans treatment system | |
| Fund Raising Hand Car Wash | Destination:<br>Sewer ☐<br>Storm Drain ☐<br>Other ☐<br>Unknown ☐<br>No Washing ☐ | |
| | Treatment<br>Grit Trap ☐<br>Oil/Water Separator ☐<br>Other ☐<br>No Treatment ☐ | |
| | How often is treatment system cleaned | |
| | Company that cleans treatment system | |
| Radiator Repair | Destination:<br>Sewer ☐<br>Storm Drain ☐<br>Other ☐<br>Unknown ☐<br>Not Performed ☐ | |
| | Treatment<br>Grit Trap ☐<br>Oil/Water Separator ☐<br>Other ☐<br>No Treatment ☐ | |
| | How often is treatment system cleaned | |
| | Company that cleans treatment system | |

## E. Liquid Waste Storage And Documentation

| | | |
|---|---|---|
| Oil Change/Lube | Done ☐ Not Done ☐ | |
| | Storage | Tank ☐ Drum ☐ Other |
| | Capacity | |
| | Location:<br>Underground ☐<br>Aboveground ☐<br>Inside ☐<br>Outside ☐<br>On Concrete ☐<br>On Grass ☐ | |
| | Waste Hauler Name | |
| | Date of Latest Manifest | |
| | | |
| Transmission Service | Done ☐ Not Done ☐ | |
| | Storage | Tank ☐ Drum ☐ Other |
| | Capacity | |
| | Location:<br>Under ground ☐<br>Above ground ☐<br>Inside ☐<br>Outside ☐<br>On Concrete ☐<br>On Grass ☐ | |
| | Waste Hauler Name | |
| | Date of Latest Manifest | |
| | | |
| Radiator Flush Antifreeze | Done ☐ Not Done ☐ | |
| | Storage | Tank ☐ Drum ☐ Other |
| | Capacity | |
| | Location:<br>Under ground ☐<br>Above ground ☐<br>Inside ☐<br>Outside ☐<br>On Concrete ☐<br>On Grass ☐ | |
| | Waste Hauler Name | |
| | Date of Latest Manifest | |
| | | |

| | | |
|---|---|---|
| Solvents Parts Washer | Done ☐ Not Done ☐ | |
| | Storage | Tank ☐ Drum ☐ Other |
| | Capacity | |
| | Location:<br>Under ground ☐<br>Above ground ☐<br>Inside ☐<br>Outside ☐<br>On Concrete ☐<br>On Grass ☐ | |
| | Waste Hauler Name | |
| | Date of Latest Manifest | |
| | | |
| Brake Fluid | Done ☐ Not Done ☐ | |
| | Storage | Tank ☐ Drum ☐ Other |
| | Capacity | |
| | Location:<br>Under ground ☐<br>Above ground ☐<br>Inside ☐<br>Outside ☐<br>On Concrete ☐<br>On Grass ☐ | |
| | Waste Hauler Name | |
| | Date of Latest Manifest | |
| | | |

**F. Solid Waste Generated**:

| | |
|---|---|
| Tires (used) | |
| Disposal Information: | |
| | |
| | |

| | |
|---|---|
| Hoses, belts, etc. | |
| Disposal Information: | |
| | |
| | |

| | |
|---|---|
| Batteries | |
| Disposal Information: | |
| | |
| | |
| | |

| | |
|---|---|
| Oil Rags | |
| Disposal Information: | |
| | |
| | |
| | |

| | |
|---|---|
| Lathe | |
| Disposal Information: | |
| | |
| | |
| | |

### G. Waste Storage Areas:

| Describe waste storage areas: | | |
|---|---|---|
| Waste stored near floor drains? | Yes ☐ No ☐ | |
| Waste stored near storm drains? | Yes ☐ No ☐ | |
| Evidence of spills? | Yes ☐ No ☐ | |
| Stained concrete/soil? | Yes ☐ No ☐ | |
| Open or leaking drums, buckets, etc.? | Yes ☐ No ☐ | |
| Containment provided where needed? | Yes ☐ No ☐ | |
| Floatable such as auto parts, paper in floor drains or storm drains? | Yes ☐ No ☐ | |
| Waste storage area neat? | Yes ☐ No ☐ | |

### H. Additional Comments

_____

_____

_____

_____

Inspector:_____ Date:_____

Reviewed By: _____ Date: _____

Date and Inspector Initials ( )

# STORM WATER MANAGEMENT
## # CONSTRUCTION SITE INSPECTION REPORT

**CONSTRUCTION SITE INSPECTION REPORT**
**Department of Environmental Affairs**
**4901 Jefferson Hwy. Suite E**
**Jefferson, LA 70121**

**Date of Inspection:**
**Inspectors:**
**LPDES Permit #:**
**NOI Required:**
**Agency Interest (AI) #:**
**SIC Code :**

**Municipal ☐ Industrial ☐ Residential ☐**

**Date of initial contact:**

---

**Additional visits:**

---

**Project Name:**

---

**Location:**

---

**Total Square Feet:**

---

**Acreage:**

---

**Number of construction entrances:**

---

**General Contractor:**
**Phone:**

---

**Person(s) Contacted:**
**Cell Phone Number:**

---

# STORM WATER MANAGEMENT
## # CONSTRUCTION SITE INSPECTION REPORT

**Department of Environmental Affairs Inspector(s)**:

**Receiving water bodies:**

**Sedimentation traps on storm drains?** ☐ **Yes** ☐ **No**

**Mud in storm drains?** ☐ **Yes** ☐ **No**

**Silt fences around construction site?** ☐ **Yes** ☐ **No**

**Entrances maintained with gravel or mulch?** ☐ **Yes** ☐ **No**

**Stabilization practices employed?** ☐ **Yes** ☐ **No**

**Dumpster on site for solid waste?** ☐ **Yes** ☐ **No**

**Litter on site?** ☐ **Yes** ☐ **No**

**Bulk Petroleum Products on site?** ☐ **Yes** ☐ **No**

**Open or leaking drums?** ☐ **Yes** ☐ **No**

STORM WATER MANAGEMENT

**# CONSTRUCTION SITE INSPECTION REPORT**

**Cement trucks washed on site?** ☐ **Yes** ☐ **No**

---

**Equipment cleaned on site?** ☐ **Yes** ☐ **No**

---

**Mop sink for paints?** ☐ **Yes** ☐ **No**

---

**Disposal of toxics handled properly?** ☐ **Yes** ☐ **No**

---

**Areas of Improvement:**

**Additional Comments:**

**Post Construction Activities:**

**Inspector:**
**Date:**

**Reviewed By:**
Sami Khalil, Stormwater Management Supervisor
**Date:**

# MS4 Construction Site Inspection Checklist

Date of Initial Contact _____ DEA Inspector(s) _____

Additional visits _____

Project: _____ Building square footage: _____

Location: _____ Site acreage: (sq.ft./43,560) _____

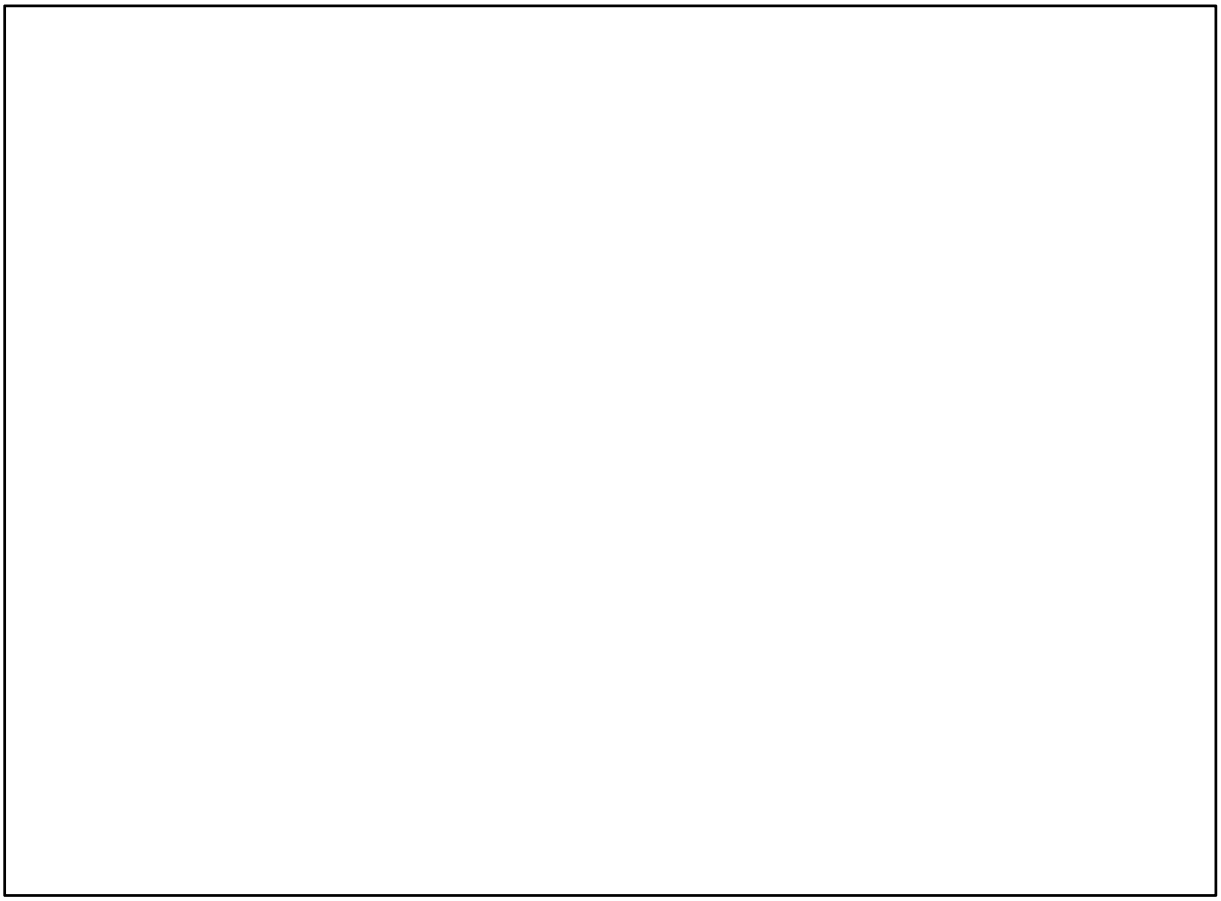
_____ # of construction entrances _____

_____

General Contractor: _____ Office phone: _____

Person(s) contacted: _____

Phone: _____



**Sediment traps** on storm drains? _____

[ ] YES [ ] NO [ ] N/A _____

**Mud/silt/debris** in storm drains? _____

[ ] YES [ ] NO [ ] N/A _____

**Silt fences** around disturbed areas? _____

[ ] YES [ ] NO [ ] N/A _____

**Entrances** maintained with aggregate or mulch? _____

[ ] YES [ ] NO [ ] N/A _____

**Stabilization** practices employed? _____

[ ] YES [ ] NO [ ] N/A _____

**Dumpster** for solid waste on site? _____

[ ] YES [ ] NO [ ] N/A _____

**Litter** on site/Poor housekeeping? _____

[ ] YES [ ] NO [ ] N/A _____

**Bulk petroleum** products on site? _____

[ ] YES [ ] NO [ ] N/A _____

**Open** or **leaking drums**? _____

[ ] YES [ ] NO [ ] N/A _____

**Containment** for petroleum products? _____

[ ] YES [ ] NO [ ] N/A _____

**Cement trucks** washed on site? _____

[ ] YES [ ] NO [ ] N/A _____

**Equipment cleaned** on site? _____

[ ] YES [ ] NO [ ] N/A _____

**Hazardous material** disposed of properly? _____

[ ] YES [ ] NO [ ] N/A _____

Jefferson Parish Environmental Affairs
Storm Water Management
4901 Jefferson Highway
Suite E
Jefferson, Louisiana 70121
Date: _____

Re: **Stormwater General Permit Associated with Construction Activity Greater than 5 Acres Notice of Intent (NOI) CSW-G**

Dear : _____

Attached is a **Stormwater General Permit Associated with Construction Activity Greater than 5 Acres Notice of Intent (NOI) CSW-G,** for a Louisiana Pollutant Discharge Elimination System (LPDES) permit, authorized under EPA's delegated NPDES program under the Clean Water Act. To be considered complete, every item on the form must be addressed and the last page signed by an authorized company agent.

Three copies (one original and two copies) of your **completed NOI** should be submitted to:

Department of Environmental Quality
Office of Environmental Services
Post Office Box 4313
Baton Rouge, LA 70821-4313
Attention: Permits Division

In addition, a copy of the completed NOI should be submitted to:

Michael Lockwood - Director
Atten: Sami Khalil – Storm Water Management Supervisor
Jefferson Parish Environmental Affairs
4901 Jefferson Parish, Suite E
Jefferson, Louisiana 70121

If you have any questions or comments, please contact Sami Khalil, Storm Water Management Supervisor at (504) 731-4612.

Sincerely,

Michael Lockwood, Director
Jefferson Parish Department of Environmental Affairs

Attachment Received by: _____

Date: _____

**SR16- Complaint:**
**Address:**
**Inspectors: Date: Time:**

| | |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

**Inspector:** Diane Coughlin, Environmental Quality Specialist
Jefferson Parish Department of Environmental Affairs
dcoughlin@jeffparish.net

**SCREENING OF STORMWATER OUTFALLS**
**INSPECTION REPORT**

**DRY [ ] WET [ ] WEATHER**

Investigator: Date:

Type of Area: **Residential** ☐ **Commercial** ☐ **Industrial** ☐ **Other** ☐

Zone: Basin:

**SCREENING OF CANAL**

**Location:** **Street canal runs along:**

**Does the storm drainage system appear to be working properly? [y ] [n ]**
**If no, describe:**

**Type of canal bank : [ vegetated ] [ concrete ] Stable: [y ] [n ]**
**If no, describe:**

**Is nutria activity apparent? [ y ] [n ]**

**Are there any signs of pollutants? [ y ] [n ]**
**Litter [ ] Sheen [ ] Foam [ ] Odor [ ] Algae [ ] Turbidity [ ]**
**Excessive vegetation [ ] Absence of vegetation [ ]**
**Other:**

**Recommended Actions: [ none]**

**SCREENING OF OUTFALL**
**Location:** **Side: (N) (S)**

**Pipe Size:** **Type: concrete metal other:**

**Is water flowing from the pipe?**

**If yes, describe appearance of discharge: Sheen [ y ] [n ] Foam [ y ] [ n ]**

**Color [ clear ] _____ Turbidity [ clear ]**

**Other:**

**Was a sample taken? [ y ] [n ] Type:**

**Is there excessive sediment accumulation below outfall? [y ] [n ]**
**Does the vegetation around the outfall show signs of pollutants? [ y ] [ n]**
**If yes, describe:**

**Recommended Actions: [ none] Sub-Basin Survey: [ ]**
**Other:**

**SCREENING OF STORMWATER OUTFALLS**
**INSPECTION REPORT**

**DRY [ ] WET [ ] WEATHER**

Investigator: Date:

Type of Area: **Residential** ☐ **Commercial** ☐ **Industrial** ☐ **Other** ☐

Zone: Basin:

**SCREENING OF CANAL**

**Location:** **Street canal runs along:**

**Does the storm drainage system appear to be working properly? [y ] [n ]**
**If no, describe:**

**Type of canal bank : [ vegetated ] [ concrete ] Stable: [y ] [n ]**
**If no, describe:**

**Is nutria activity apparent? [ y ] [n ]**

**Are there any signs of pollutants? [ y ] [n ]**
**Litter [ ] Sheen [ ] Foam [ ] Odor [ ] Algae [ ] Turbidity [ ]**
**Excessive vegetation [ ] Absence of vegetation [ ]**
**Other:**

**Recommended Actions: [ none]**

**SCREENING OF OUTFALL**
**Location:** **Side: (E) (W)**

**Pipe Size:** **Type: concrete metal other:**

**Is water flowing from the pipe?**

**If yes, describe appearance of discharge: Sheen [ y ] [n ] Foam [ y ] [ n ]**

**Color [ clear ] _____ Turbidity [ clear ]**

**Other:**

**Was a sample taken? [ y ] [n ] Type:**

**Is there excessive sediment accumulation below outfall? [y ] [n ]**
**Does the vegetation around the outfall show signs of pollutants? [ y ] [ n]**
**If yes, describe:**
**Recommended Actions: [ none] Sub-Basin Survey: [ ]**
**Other:**

Storm Water Management

**Jefferson Parish Department of Environmental Affairs**

**INDUSTRIAL SURVEY REPORT - STORM WATER**

DATE: _____ TIME: _____

COMPANY NAME: AI #

_____

ZONE: BASIN:

ADDRESS: PHONE:

_____

PERSON CONTACTED: _____ TITLE: _____

BY STAFF MEMBER(S): _____

TYPE OF BUSINESS: _____

DETAILED DESCRIPTION OF OPERATION: _____

_____

_____

_____

_____

☐ DISCHARGES TO DRAINAGE SYSTEM:

- ☐ Process water (Describe) _____
- ☐ Non-contact cooling water _____
- ☐ Discharge Permit Permit # _____

☐ DISCHARGES TO SEWERAGE SYSTEM:

Are hazardous materials stored here? ☐ Yes ☐ no

Are hazardous wastes generated at this facility? ☐ Yes ☐ no

If yes, give E.P.A. Generator Identification Number: _____

I certify that I have visited the above business and find that, to the best of my knowledge, said business should be regarded as:

- ☐ An insignificant industry to be eliminated from further consideration
- ☐ An industry that should be referred to the Louisiana Department of Environmental Quality and apply for a discharge permit
- ☐ An industry that should be referred to the Stormwater Supervisor
- ☐ An industry that should be referred to the Pre-Treatment Supervisor
- ☐ An industry that should be referred to the Louisiana Department of Health and Hospitals

_____

(Name) (Date)

Date and Inspector's Initials ( )

**INDUSTRIAL and HIGH RISK INSPECTION CHECKLIST**

Company Name: _____

Location Address:

_____

_____

Mailing Address:

_____

_____

Phone: _____

Date: _____ Last Inspection Date: _____

Time: _____ Permit # _____

Announced [ ] Unannounced [ ] Water Account No.(s) _____

Initial [ ] Followup [ ] _____

**A. GENERAL INFORMATION**

Person(s) Contacted: _____

By Staffmembers: _____

Description of Operation: (request copies of, or draw diagram of general facility layout/manufacturing processes, including any treatment facilities and discharge points)

_____
_____
_____
_____
_____
_____

SIC #(s) _____

LPDES/NPDES Permit(s) # _____

Number of permitted Outfalls _____ Is stormwater monitored at these sites? Yes [ ] No [ ]

Is stormwater sampled at any outfalls? (If yes, get copies of latest DMRs) Yes [ ] No [ ]

Are rainfalls records being maintained? Yes [ ] No [ ]

Outfall point locations(s) (drainage):

_____
_____
_____

_____

_____

**B. FACILITY OPERATION CHARACTERISTICS**

Number of days/weeks business operating: _____

Hours of operation: a.m. to p.m. [ ] continuous

Types of Facilities:

| | | | |
|---|---|---|---|
| [ ] | Offices | [ ] | Warehouse |
| [ ] | Manufacturing Facilities | [ ] | Fleet Maintenance Shop |
| [ ] | Employee Kitchenette | [ ] | Car/Truck Wash |
| [ ] | Employee Cafeteria | [ ] | Steam Cleaners |
| [ ] | Commercial Kitch | [ ] | Laundry |
| [ ] | Cooling Towers: non-contact [ ] | contact [ ] | |

[ ] Coolers: # _____ Sizes: _____

[ ] Freezers: # _____ Sizes: _____

[ ] Ice Machines: # _____ Sizes: _____

Number of employees: _____

**C. DISCHARGE CHARACTERISTICS**

Origin of Discharges:

| | Area of Facility | Discharge to Sanitary Sewerage | Discharge to Stormwater Drainage |
|---|---|---|---|
| [ ] | Restrooms | [ ] | [ ] |
| [ ] | Kitchen, cafeterias, etc. | [ ] | [ ] |
| [ ] | Process wastewater | [ ] | [ ] |
| [ ] | Storage tank overflow | [ ] | [ ] |
| [ ] | Diked storage area | [ ] | [ ] |
| [ ] | Cooling towers, noncontact | [ ] | [ ] |
| [ ] | Cooling towers, contact | [ ] | [ ] |
| [ ] | Floor drains | [ ] | [ ] |
| [ ] | Facility washdown | [ ] | [ ] |
| [ ] | Car/Truck wash | [ ] | [ ] |
| [ ] | Coolers/freezers/ice machines | [ ] | [ ] |
| [ ] | Septic tank | [ ] | [ ] |
| [ ] | Package Sewage Treatment Plant | [ ] | [ ] |
| [ ] | Outside Drains | [ ] | [ ] |
| [ ] | Other | _____ | |

Have there been any changes in the facility operation (i.e. new additions, remodeling, etc.) or industrial processes since the last inspection? Yes [ ] No [ ] (If yes, describe below.)

_____

_____

If yes, have any of the above changes affected the flow, discharge points or wastewater characterisitics?
Yes [ ] No [ ] (If yes, describe below.)

_____

_____

_____

**D. TREATMENT**

[ ] No Treatment

| | Treatment Facility (check if applicable) | Number of Units | Area or process that facility services |
|---|---|---|---|
| [ ] | Grease trap | _____ | _____ |
| [ ] | Oil Separator | | |
| [ ] | Sedimentation/grit trap | _____ | _____ |
| [ ] | pH adjuster | _____ | _____ |
| | [ ] manual | _____ | _____ |
| | [ ] automatic | _____ | _____ |
| [ ] | Septic tank | _____ | _____ |
| [ ] | Package sewage treatment | _____ | _____ |
| [ ] | Screen/filters | _____ | _____ |
| [ ] | Chemical precipitation | _____ | _____ |
| [ ] | Air flotation | _____ | _____ |
| [ ] | Biological treatment | _____ | _____ |
| | (type) _____ | | |
| [ ] | Other _____ | | |
| | _____ | | |

**E. EQUIPMENT**

If there is an on-site fleet maintenance shop and/or truck was, collect the following information:
Number/Type of vehicles serviced: _____
Type of treatment system(s) (describe): _____
[ ] Waste oil tank _____ gallons
Company that pumps out waste oil tank: _____
How often: _____

**F. CHEMICALS AND WASTES**

List chemical(s) stored: Quantity: Type/Size of Container:

_____

_____

_____

_____

_____

Is there a containment wall around them? Yes [ ] No [ ]
Are there spill cleanup materials on site? Yes [ ] No [ ]

Was a Spill Prevention Control and Countermeasure Plan requested? Yes [ ] No [ ] On File [ ]
(Allow industry 2 weeks from inspection date to deliver SPCC Plan to our department.)

Proximity of chemical storage to storm drains:

_____

List hazardous materials stored: Quantity: Type/Size of Container:

_____

_____

_____

_____

Does this facility generate hazardous wastes? Yes [ ] No [ ]
(If yes, collect the following information)
EPA/DEQ Generator ID #: _____

Type of Hazardous Waste Quantity Disposal Method

_____

_____

Is there a dumpster? Yes [ ] No [ ]
If yes, is it leakproof? Yes [ ] No [ ]
If yes, is it covered? Yes [ ] No [ ]
Is there debris around the dumpster? Yes [ ] No [ ]

Comments:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Inspection Checklist completed by: _____ Date: _____

Inspection Checklist reviewed by: _____ Date: _____

**Storm Water Management**
**Jefferson Parish Department of Environmental Affaires**

# Jefferson Parish Storm Water Pollution Prevention Plan Review

Facility Name:
Address:
Basin: Zone:
Inspector(s):
Facility Representative(s):
Phone #:

Date of Inspection:
LPDES Permit #
SIC Code: AI#:
Municipal ☐ **Yes** ☐ **No**
Industrial ☐ **Yes** ☐ **No**

**1.** ☐ **Cover Sheet**
- ☐ **Company Name**
- ☐ **Address**
- ☐ **Phone Number**
- ☐ **Emergency Phone Number**
- ☐ **LPDES Permit Number**

**2.** ☐ **Certification Signature Page**
- ☐ **Certification Statement**
- ☐ **Name, Title, and Signature**
- ☐ **Plan as Amended Section**

**3.** ☐ **Pollution Prevention Team**
- ☐ **Identifies Specific Individuals**
- ☐ **Outlines Their Responsibilities**

**4. Description of Potential Pollutant Sources, Including:** see book

**A.** ☐ **Does the Plan Site Map Indicate**: **(check all that appear)**
- ☐ **Drainage Areas**
  - ☐ **Not Applicable**
- ☐ **Drainage Patterns/Outfalls**
  - ☐ **Not Applicable**
- ☐ **Structural and Non-structural Drainage/Flood Controls**
  - ☐ **Not Applicable**
- ☐ **Surface Waters**
  - ☐ **Not Applicable**
- ☐ **Significant Materials Exposed to Precipitation**
  - ☐ **Not Applicable**
- ☐ **The Location of Leaks or Spills That Have Occurred in the Last Three Years**
  - ☐ **Not Applicable**
- ☐ **The Location of Industrial Activities Exposed to Precipitation Including:**
  - ☐ **Fueling Stations**
    - ☐ **Not Applicable**
  - ☐ **Vehicle/Equipment Maintenance or Cleaning Areas**
    - ☐ **Not Applicable**
  - ☐ **Loading/Unloading Areas**
    - ☐ **Not Applicable**
  - ☐ **Waste Treatment, Storage, and Disposal Areas Exposed To Stormwater**
    - ☐ **Not Applicable**
  - ☐ **Liquid Storage Tanks**
    - ☐ **Not Applicable**
  - ☐ **Exposed Processing Areas**
    - ☐ **Not Applicable**
  - ☐ **Exposed Storage Areas**
    - ☐ **Not Applicable**

**B.** ☐ **A List of Pollutants Likely to be Present in the Discharges**
- ☐ **Not Applicable**

Storm Water Management

**Jefferson Parish Department of Environmental Affairs**

# Spill Prevention, Control and Countermeasures Plan Inspection Checklist

**Is there appropriate spill response equipment on site like spill clean up kits**?

☐ **Yes** ☐ **No**

**Have the members of the operating crews been trained annually (documented)**?

☐ **Yes** ☐ **No**

**Have quarterly site inspection been preformed (documented)**?

☐ **Yes** ☐ **No**

**Has the plan been reviewed and revised at least once a year (documented)**?

☐ **Yes** ☐ **No**

**Is there a signed copy of this plan on site?**

☐ **Yes** ☐ **No**

- **Page v (in table of contents section)**

**Is the primary and secondary coordinators information correct?**

☐ **Yes** ☐ **No**

**If no, what are the changes:** _____

- **Page 2.1**

**Is the facility mailing and site description correct?**

☐ **Yes** ☐ **No**

**If no, what are the changes:** _____

- **Page 2.2-2.3 (and following charts)**

**Is the inventory of significant materials accurate in both text and table forms?**

☐ **Yes** ☐ **No**

**If no, what are the changes:** _____

- **Site Plan (follows section 2)**

**Are the locations of tanks, containers, materials and drainage accurate?**

☐ **Yes** ☐ **No**

**If no, what are the changes:** _____

- **Section 3 (Spill Plan)**

**Does the plan contain Figure 3.1 Decision tree?**

☐ **Yes** ☐ **No**

**Review the "Emergency Equipment and Response Material" and its location.**

**Is the minimum required material on site?**

☐ **Yes** ☐ **No**

**If no, what needs to be replaced?** _____

- **Section 4 & Section 5**

**Are the predicted flows from the material storage areas accurate?**

☐ **Yes** ☐ **No**

**If no, what has changed from the first est.?**

_____

**Is the security section accurate at the site?**

☐ **Yes** ☐ **No**

**If no, what are the changes?** _____

- **Section 6 & 7**

**Has training been preformed during the year of new and present employees?**

☐ **Yes** ☐ **No**

**Are records up to date?**

☐ **Yes** ☐ **No**

**Are the outlines for the annual training and new employees training in the plan?**

☐ **Yes** ☐ **No**

**If no, what are the changes?** _____

- **APPENDIX E**

**Are the new diesel tanks inspection and testing requirements in place at the pump stations?**

☐ **Yes** ☐ **No**

Storm Water Management

**Jefferson Parish Department of Environmental Affairs**

# Industrial Facility STORM WATER Visual Inspection REPORT

Facility Name:
Address:
Basin: Zone:
Inspector(s):
Facility Representative(s):

Date of Inspection:
LPDES Permit#:
SIC Code: AI#:
Municipal ☐ **Yes** ☐ **No**
Industrial ☐ **Yes** ☐ **No**

**Is there a Vehicle Maintenance Facility on site** ? Yes ☐ No ☐

**Are there any Underground Storage Tanks at this facility** ? Yes ☐ No ☐

**No. of Aboveground Storage Tanks on site: Containment** ? Yes ☐ No ☐

**Have there been any reported spills in the last three years** ? Yes ☐ No ☐

**If so, material spilled & quantity (in gallons):**

**Any mitigation action taken:**

**Is facility connected to own package treatment plant** ? Yes ☐ No ☐

**Is storm water monitored at these sites**? Yes ☐ No ☐

**Is storm water sampled at any outfalls? (If so, get copies of latest DMRs)** Yes ☐ No ☐

**Are rainfall records being maintained?** Yes ☐ No ☐ ☐**Don't Know**

**Past notices of violations, citations, or other regulatory actions against the facility by EPA, DEQ, other state or local agencies in the past three years** Yes ☐ No ☐

**Interior floor drains discharge to:** ☐ **sanitary sewer** ☐ **storm drain** ☐**Don't Know**
**Exterior floor drains discharge to:** ☐ **sanitary sewer** ☐ **storm drain** ☐ **Don't Know**

Yes ☐ No ☐ **Outside areas clean (housekeeping)** ?
Yes ☐ No ☐ **Process debris removed regularly** ?
Yes ☐ No ☐ **Area clear of excessive dust and/or material from industrial operations**?
Yes ☐ No ☐ **Evidence of leaks and drips from equipment** ?
Yes ☐ No ☐ **Catch basins, storm water conveyance pipes and storm water treatment facilities cleaned regularly** ?
Yes ☐ No ☐ **Chemical containers properly closed and labeled** ?
Yes ☐ No ☐ **Spill containment and clean-up materials on site and in convenient locations** ?
Yes ☐ No ☐ **Used absorbent materials removed and disposed of in a timely manner** ?
Yes ☐ No ☐ **Drainage ditches and outfall areas free of erosion** ?
Yes ☐ No ☐ **Waste bins/dumpsters sealed and closed** ?
Yes ☐ No ☐ **Outdoor drums properly covered and labeled** ?
Yes ☐ No ☐ **Outdoor drum storage areas covered** ?
Yes ☐ No ☐ **Outdoor materials storage areas covered** ?
Yes ☐ No ☐ **Adequate spill containment for outdoor liquid storage areas** ?
Yes ☐ No ☐ **Are containment areas free of liquids** ?

**Report Completed By:**
**Date:**

**JEFFERSON PARISH**
**INDUSTRIAL USER SELF-MONITORING REPORT**

_____ _____
Industry Name Analytical Laboratory Name

_____ _____
Mailing Address Mailing Address

Jefferson Parish Permit # _____ Reporting Period: _____ to _____

Sample Site Location: _____

_____

Sampled By: _____ Lab or Sample No.: _____

Date Sampled:
(Composite Start Date) _____ (Composite End Date) _____

Time Sampled:
(Composite Start Time) _____ (Composite End Time) _____

Date Sampled: Time Sample:
(Grab Sample) _____ (Grab Sample) _____

Date Received in Lab: _____ Time Received in Lab: _____

Type of Sample: ( ) Grab ( ) Composite
If composite: ( ) 24-hours ( ) 12-hours ( ) 8-hours ( ) _____

Grab samples are required for pH, oil and grease, cyanide, total phenol, sulfide and volatile organics. These parameters may be reported with parameters from composite samples if they were grabbed during the same sampling period. Please indicate below the type of sample for each parameter: C = composite and G = grab

**TEST RESULTS**
(All parameters reported in mg/l, except pH (Std Units), organics (µg/l) & Temp (Degree F) unless otherwise specified by permit)

| Parameter | Results | Date & Time Analyzed | Analyst | Type of Sample | Lab No. |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

(Note: If additional space is required for parameters, please use separate sheet)

**METHODS OF ANALYSIS**

Reference used: _____

| Test | Container | Preservative | Method | Page |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Comments:

_____
_____
_____
_____
_____

**QUALITY CONTROL AND QUALITY ASSURANCE RESULTS**

_____
_____
_____
_____
_____
_____
_____
_____
_____

**ATTACH A SIGNED COPY OF THE LABORATORY REPORT WITH CHAIN OF CUSTODY**

**CERTIFICATION STATEMENT**

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 the 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.

Company Certified By: _____ Date: _____

Signature of Authorized Representative

_____

Name and Title of Authorized Representative (Please Print)

**INDUSTRIAL AND HIGH RISK MONITORING PROGRAM**
**VISUAL MONITORING CHECKLIST**

Instructions: Complete this record for each facility. Place an X in the appropriate box for each item. If any response requires and explanation, do so in the Observations/Comments space. Additional comments should be included at the bottom of this form or attached on a separate sheet of paper.

Facility Name: _____ Date: _____

Location: _____ Monitor's Name: _____

Non-structural Best Management Practices (BMPs) to be followed at this facility include the items indicated below:

| | | |
|---|---|---|
| ( ) Good Housekeeping | ( ) Litter Control | ( ) Secondary Containment |
| ( ) Preventative Maintenance | ( ) Labeling | ( ) Visual Inspection |
| ( ) Mitigation Cleanup | ( ) Materials Handling | |

Quarterly Visual Inspection Results:

| | | YES | NO | N/A | Observations/Comments |
|---|---|---|---|---|---|
| 1. | Does it appear that the BMPs applicable to the site (listed above) are being followed? If not, describe areas of noncompliance. | ( ) | ( ) | ( ) | _____ _____ |
| 2. | Area materials stored outside exposed to stormwater? | ( ) | ( ) | ( ) | _____ |
| 3. | Are industrial activities conducted outside exposed to stormwater? | ( ) | ( ) | ( ) | _____ |
| 4. | Are there nonstormwater discharges to the stormwater drainage system or the ground surface? If so, describe these discharges. | ( ) | ( ) | ( ) | _____ _____ |
| 5. | Does stormwater pond on the site? | ( ) | ( ) | ( ) | _____ |
| 6. | Could spills flow to the stormwater drainage system? | ( ) | ( ) | ( ) | _____ |
| 7. | Is this facility in compliance with the Spill Prevention and Control Plan (SPC)? | ( ) | ( ) | ( ) | _____ |
| 8. | Is a spill cleanup and containment kit kept on site? | ( ) | ( ) | ( ) | _____ |
| 9. | Are employee training records maintained? | ( ) | ( ) | ( ) | _____ |
| 10. | Are equipment maintenance records maintained? | ( ) | ( ) | ( ) | _____ |
| 11. | Does it appear that any valves are leaking? | ( ) | ( ) | ( ) | _____ |
| 12. | Does it appear that any tanks are cracked, leaking, or in poor shape? | ( ) | ( ) | ( ) | _____ |
| 13. | Are the grounds clear of all litter, such as old tires, old rims, miscellaneous debris, etc.? | ( ) | ( ) | ( ) | _____ |
| 14. | Are any portions of the facility grounds eroding? | ( ) | ( ) | ( ) | _____ |
| 15. | Are there any visible signs of spills? | ( ) | ( ) | ( ) | _____ |
| 16. | Is the secondary containment in good shape? | ( ) | ( ) | ( ) | _____ |
| 17. | Are there any drums or other containers open in which precipitation could enter? | ( ) | ( ) | ( ) | _____ |
| 18. | Do the impervious areas of the facility need to be swept? | ( ) | ( ) | ( ) | _____ |
| 19. | Any visible signs of leakage on mechanical equipment? | ( ) | ( ) | ( ) | _____ |
| 20. | Are the trash dumpsters covered? | ( ) | ( ) | ( ) | _____ |

Additional Comments: _____
_____
_____

Storm Water Management
**Jefferson Parish Department of Environmental Affairs**

# Pesticide Application Inspection Report

**Date:** **Time:**

**Weather Conditions:**

**Zone:** **Basin:**

**Inspected By:**

**Announced:** ☐ **Unannounced:** ☐

**Company Name**:
**Person Contacted:**
**Address**:

**Phone:** Fax: **e-mail:**

**Applicator's Name, Title**
**Certification Number**
**Certification Class(s)**
**Date of Expiration**

*If Certification is Not Valid, Name, Location & Phone Number of Nearest Certified Applicator:

**Applicator's Name, Title**
**Certification Number**
**Certification Class(s)**
**Date of Expiration**

**Type of Application:** Hand Applicator ☐ Rig Applicator ☐

**Type of Area Sprayed:**

| | | | | | |
|---|---|---|---|---|---|
| Roadside | ☐ | Median | ☐ | Canal/Ditch | ☐ |
| Banks | ☐ | Bottoms | ☐ | | |

**Date of Last Application in This Location**:

**Herbicides(s) Used (attach label and MSDS for each) and Where Used (canal bank, bottom, etc**.):

**Mixing Ratio:**

| | |
|---|---|
| Herbicide_ | ☐ ounces, ☐ gallons, etc. |
| Water____ | ☐ ounces, ☐ gallons, etc. |
| Other____ | ☐ ounces, ☐ gallons, etc. |

Herbicide_ ☐ ounces, ☐ gallons, etc.
Water____ ☐ ounces, ☐ gallons, etc.
Other____ ☐ ounces, ☐ gallons, etc.

**Application Rate (per acre)**:

**Were Herbicides Mixed on Site?:** Yes ☐ No ☐
If yes: Did the applicator use a Parish water supply, such as a fire hydrant?
Yes ☐ No ☐
If yes, was a backflow preventer used? Yes ☐ No ☐
If no: Where were the chemicals mixed?

**Does the applicator have a copy of the label and MSDS on the vehicle for each herbicide being used?** Yes ☐ No ☐

**Is the applicator wearing the protective clothing prescribed by the label?**
Yes ☐ No ☐

**Describe the protective clothing**:

**Does the company have an SPCC Plan?** Yes ☐ No ☐ Get a copy

*If the company does not have an SPCC Plan, describe measures that would be taken in the event of a spill:

**Is a spill cleanup kit on the vehicle?** Yes ☐ No ☐

* Observe applicator while spraying and note extent of coverage, drift problems, leaks, etc.

**Equipment Check:**

**Are there any leaks in the hoses or from the valves?** Yes ☐ No ☐

*Ask the applicator to pressurize the system so the pressure gauges can be checked (Rig applications). The gauges are usually located on the front of the truck.

**Are the pressure gauges working?** Yes ☐ No ☐

**Are all hoses, fittings and valves free of leaks or cracks?** Yes ☐ No ☐

**Are the safety lights on the vehicle working (rig applicator only):** Yes ☐ No ☐

**Comments:**

Report Completed By: Date:

Report Reviewed By: Date:
Sami Khalil, Stormwater Supervisor

**JEFFERSON PARISH DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

**BUILDING PERMIT PLAN REVIEW FORM**

For All Non-residential Building Permit Applications and all Construction Sites 1.0 Acre or Greater

1. Name and address of (proposed) business or construction site:_____
_____
_____
_____

2. Name of authorized person(s) to contact regarding questions about this business:
_____
Phone:_____Fax:_____
E-mail:_____

3. Type of Business (check all that apply):

| | |
|---|---|
| [ ]Manufacturer | [ ]Grocery/Supermarket |
| [ ]Machine Shop | [ ]Convenience Store |
| [ ]Auto Repair Shop | [ ]Retail Store |
| [ ]Service Station | [ ]Shopping Center |
| [ ]Carwash | [ ]Funeral Home |
| [ ]Laundromat | [ ]Hair Salon/Barbershop |
| [ ]Food Processor | [ ]Nail Salon |
| [ ]Restaurant/Food Service | [ ]Business Office |
| [ ]Bakery | [ ]Hotel/Motel |
| [ ]Hospital | [ ]Nursing Home |
| [ ]Dental Office | [ ]School |
| [ ]Medical Office | [ ]Warehouse |
| [ ]Veterinarian Office | [ ]Church |
| [ ]Communications Tower | [ ]Other:_____ |

This is (check all that apply):

[ ]New construction greater than one (1) acre, but less than five (5) acres
[ ]New construction five (5) acres or greater
[ ]New construction less than one (1) acre
[ ]Renovation to Existing Building
[ ]Interior Build-Out of Business
[ ]Addition to Existing Building
[ ]Multi-Unit Building

5. Check any of the following treatment devices to be employed on-site:

| | |
|---|---|
| [ ]Greasetrap/Interceptor | [ ]Floor drain screens |
| [ ]Oil/water separator | [ ]Septic tank |
| [ ]Sedimentation/grit trap | [ ]Silver recovery unit |
| [ ]Sewerage treatment plant | [ ]Other (specify)_____ |

6. If new construction, check any of the following treatment/containment methods to be employed during construction activities:

[ ]Drainage culvert covers [ ]Silt fence
[ ]Hay bales [ ]Detention pond
[ ]Other (specify)_____

7._____Check here if hazardous materials will be stored on site

8._____Check here if hazardous wastes will be generated
Hazardous Waste Generator Number_____

10. Please give a thorough, detailed description of operations, including the source(s) of any wastewater entering the sanitary sewerage system or the storm drainage system, and the source of any emissions to air, land, water, etc. from the facility_____
_____
_____
_____
_____
_____
_____

Other documentation, such as, permit applications, notices of intent, other departmental approvals and blueprints may be required in support of this form. A permit to discharge into the sewerage and/or drainage system(s) may be required from the Jefferson Parish Department of Environmental Affairs prior to commencement of operations.

Construction sites of five (5) acres or larger must file a Notice of Intent (NOI) with the Louisiana Department of Environmental Quality (LDEQ), to be covered under an LPDES General Permit for the discharge of stormwater from a construction site, at least two (2) days prior to the commencement of construction activities (such as site clearing or grading). A Stormwater Prevention Plan must be developed for each construction site one (1) acre or greater covered by this permit. For more information regarding this permit, contact LDEQ at (225) 765-0534.

If you need assistance or have any questions, contact the Jefferson Parish Department of Environmental Affairs at (504) 736-6440.

DO NOT WRITE BELOW THIS LINE (FOR OFFICE USE ONLY)

_____
_____North American Industry Classification System (NAICS) Code
_____Requires inspection by pretreatment program
_____Requires inspection by stormwater management program
_____Meets criteria for Food Service Operation
_____Requires letter to determine if Food Service Operation
_____Requires no further follow-up

Determination made by:_____Date:_____

Form EDCD-20

**INSPECTION REPORT**
**JEFFERSON PARISH**
**DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

**Address:**

**Council District**:

**Type of Complaint:**

**Responding Division**:

**Service Request No:**

**Lot Legal Descriptions:**

**Background:**

**Inspection:**

**Conclusions:**

Submitted by: _____ Date:
Name, Title

Reviewed by: _____ Date:

Name, Title

FORM No. EDCD-3

**PHONE LOG**

DATE: _____ TIME: _____

COMPANY NAME: _____

PERSON CONTACTED: _____

BY STAFF MEMBER: _____

PURPOSE OF CONTACT: _____

SUMMARY OF DISCUSSION: _____

REPORT COMPLETED BY : _____

# CONSTRUCTION ACTIVITIES VIOLATION NOTICE

**ADDRESS:** _____

**IT HAS BEEN REPORTED THAT THERE ARE CONDITIONS ON THIS PROPERTY WHICH MAY BE A SAFETY HAZARD. AN INSPECTION OF THIS PROPERTY REVEALS POSSIBLE VIOLATIONS OF THE JEFFERSON PARISH CODE OF ORDINANCES INCLUDING BUT NOT LIMITED TO THE FOLLOWING:**

☐ **ILLEGAL DUMPING:** ***Section 16-3(b)*** : No person shall place, deposit or allow to be placed or deposited on his premises or any other premises to include any public street, road or alley any refuse or other objectionable waste, except in a manner described in this chapter.

☐ **PROHIBITION AGAINST TRACKING BY VEHICLES OF FOREIGN SUBSTANCES:** ***Section 16-6(c)*** : Containment of loads on vehicles; prohibition against tracking by vehicles of foreign substances. No person shall drive or move any truck or other vehicle loaded with litter within the parish, unless such vehicle is constructed or loaded as to prevent any load, contents or litter from being blown or deposited upon any street, alley or other public place. **Nor shall any person drive or move any vehicle or truck within the parish, the wheels or tires of which carry onto or deposit, mud, dirt, sticky substances, litter or foreign matter of any kind on any street, alley, or other public place.**

☐ **LITTERING IN DRAINAGE DITCHES AND ON PUBLIC STREETS:** ***Section 16-9(a)*** : It shall be unlawful for any person to dump, throw, place or otherwise dispose of cut grass, weeds, trees or tree limbs, trash, garbage or other debris in any drainage ditch, canal or drainage catch basin or pedestrian walkway in Jefferson Parish.

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☐ **ILLEGAL DUMPING IN CATCH BASINS:** ***Section 16-9.2(a)*** : The dumping of trash, debris, greases and oils, such as but not limited to cooking oil and fats, motor oil, antifreeze, solvents, truck and automotive fluids, paint, paint thinners, and gasoline into catch basins, drainage culverts, lines, canals or any body of water is prohibited. This prohibition shall not apply to any activity permitted or authorized by a state or federal program. **The fine for violation of part Section 16-9.2(a) above shall be a fine, as provided in L.R.S. 33:1243B(2), not to exceed five thousand dollars ($5,000.00).**

This situation has the potential to clog our drainage system, contribute to street flooding and negatively impact water quality in Lake Pontchartrain and other receiving water bodies. It also creates a safety hazard and has the potential to be harmful to public health.

You must contact the Jefferson Parish Department of Environmental Affairs at 731- 4612 between the hours of 8:30 am to 4:00 pm to schedule an inspection of this site to begin corrective measures.

**Continuation of this practice or failure to take immediate appropriate corrective action within ten (10) CALENDAR DAYS of the DATE OF INSPECTION will result in a violation being issued to this address. Additionally you may be required to appear before the Administrative Hearing Officer and fines and hearing costs up to five thousand dollars ($5000.00) per violation may be imposed.**

**INSPECTOR:** **Diane Coughlin** **DATE:** _____

**JEFFERSON PARISH DEPARTMENT OF ENVIRONMENTAL AFFAIRS**
**4901 JEFFERSON HIGHWAY – SUITE E, JEFFERSON, LA 70121**
**PHONE: 504-731-4612 FAX: 504-731-4607**

# CONSTRUCTION ACTIVITIES COURTESY NOTICE

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**4901 JEFFERSON HIGHWAY – SUITE E, JEFFERSON, LA 70121**
**PHONE: 504-731-4612 FAX: 504-731-4607**

# ILLEGAL DUMPING VIOLATION NOTICE

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# WASTE WATER VIOLATION NOTICE

## ADDRESS: _____

**IT HAS BEEN REPORTED THAT THERE ARE CONDITIONS ON THIS PROPERTY WHICH MAY BE A SAFETY HAZARD. AN INSPECTION OF THIS PROPERTY REVEALS POSSIBLE VIOLATIONS OF THE JEFFERSON PARISH CODE OF ORDINANCES INCLUDING BUT NOT LIMITED TO THE FOLLOWING:**

☐ **UNLAWFUL DISCHARGE:** ***Section 27-159(a) :*** The discharge of any wastewater into the storm drainage system by any person shall be unlawful.

☐ **DOMESTIC WASTE DISCHARGES:** ***Section 27-159(b) :*** All discharges of domestic waste shall be made into the public sanitary sewerage system.

☐ **INDUSTRIAL WASTE DISCHARGERS:** ***Section 27-159(c) :*** Discharges of industrial wastes shall be made to the sanitary sewerage system, the storm drainage system, or, with special permission of the director, to a private disposal system.

☐ **PROHIBITED DISCHARGES ON PROPERTY:** ***Section 27-159(d)(1) :*** It shall be unlawful for any person to place, deposit or permit to be deposited in any unsanitary manner on public or private property within the parish or in any area under the jurisdiction of the parish any human or animal excrement, garbage, or other commercial or industrial wastes or waste liquids.

☐ **PROHIBITED DISCHARGES IN NATURAL OUTLETS:** ***Section 27-159(2) :*** It shall be unlawful to discharge to any natural outlet within the parish or in any area under the jurisdiction of the parish any sewage or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this division.

☐ **PROHIBITED WASTE DISPOSAL:** ***Section 27-159(3) :*** It shall be unlawful to transport any waste materials from one (1) site to another site and subsequently discharge such materials into the public storm drainage system without the express written authorization of the director. Further, it shall be unlawful to discharge any waste materials directly into manholes, storm drains, cleanouts or sampling ports without the express written consent of the director.

☐ **PRIVIES, SIMILAR FACILITIES PROHIBITED:** ***Section 27-159(4) :*** Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool or other facility intended or used for the disposal of sewage.

☐ **PROHIBITIONS AND LIMITATIONS OF DISCHARGES INTO THE STORM DRAINAGE SYSTEM*: Section 27-161(b)*(1-5) *:*** General prohibitions and limitations: No person shall discharge or cause or permit to be discharged to the storm drainage system any waste or wastewater containing any pollutant or other material of such character or quantity which either alone or by combination or interaction with other substances will: Constitute a hazard to human or animal life in the storm drainage system or the stream or watercourse receiving the discharge from the storm drainage system.

- Interfere with or damage the system or its efficiency.
- Constitute a hazard to human or animal life in the storm drainage system or the stream or watercourse receiving the discharge from the storm drainage system;
- Violate any standard or effluent limitation;
- Cause the storm drainage system to violate any applicable federal or state water quality standard;
- Violate any of the specific prohibitions or limitations established by subsection (c).

This situation has the potential to clog our drainage system, contribute to street flooding and negatively impact water quality in Lake Pontchartrain and other receiving water bodies. It also creates a safety hazard and has the potential to be harmful to public health.

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# STORM DRAIN MARKER REQUEST AND INFORMATION FORM

4901 Jefferson Highway, Suite E
Jefferson, LA 70121
Phone: (504) 731-4612

Number of markers requested: As many as we can give.

"Flows to Coastal Wetlands" X _____

"Flows to Lake Pontchartrain" _____

Location of Storm Drain Site to be marked:

Subdivision Name or Street Location: Near 353 Melbrook_____

Parish_____Jefferson_____

City/Town: Gretna_____Zip Code: 70056_____

Name of Organization: (may also like to get some for his church – call to verify)____

Name of Director (or Functional Equivalent):_____

Signature: _____ Date: _____

Name of Contact: Mr. Will Sims___ (called on 7-1-2014 to inquire about markers)

Phone Number: 504-338-6829_____

Fax Number: _____

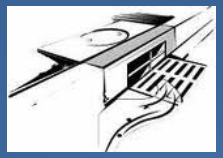
E-Mail Address: _____

**Please Note:**

A "Follow-Up" Letter is required to be sent to the Jefferson Parish Department of Environmental Affairs once the storm drain marker activities are complete. The letter should be brief to include the location (address, street name, city), and the number of storm drain markers placed. Please include an estimate of how many volunteers participated in the event. Photos are always welcomed and helpful.

**Send to:** Jefferson Parish- Department of Environmental Affairs
4901 Jefferson Highway, Suite E
Jefferson, LA 70121
Attention: Sami Khalil

Under the Municipal Separate Storm Sewer Systems (MS4) permit requirement, Jefferson Parish provides the Storm Drain Markers as a tool to increase public environmental awareness to reduce urban nonpoint water pollution.



## *ONLY* RAIN WATER GOES IN THE STORM DRAIN

Non-point source pollution cannot be traced to one discrete point source like a pipe from a factory, but rather comes from many diffuse sources. It is caused by rainfall moving over and through the ground, picking up fertilizers, pesticides, sediment, oil, animal waste, and other pollutants. These pollutants lead to water quality problems and have harmful effects on recreation, fisheries, and wildlife in receiving water bodies like Lake Pontchartrain. Strom water is not treated before entering drains that lead directly to lakes and other water bodies.

## *SÓLO* AGUA DE LLUVIA ENTRA EN EL DRENAJE DE LAS ALCANTARILLAS

Contaminación de fuente puntual no es contaminación que puede atribuirse a una sola fuente, pero proviene de muchas fuentes. Es causada por las lluvias moviéndose sobre el suelo recogiendo fertilizantes, pesticidas, sedimentos, petróleo, desechos de animales y otros contaminantes. Estos contaminantes conducen a problemas de la calidad del agua y tiene efectos nocivos sobre el suministro de agua potable, la recreación, pesca y vida Silvestre. Estos efectos nocivos dependen del contaminante. El agua de lluvia no recibe tratamiento antes de entrar en desagües que conducen directamente a lagos y otros cuerpos de agua.

JEFFERSON PARISH


Department of Environmental Affairs

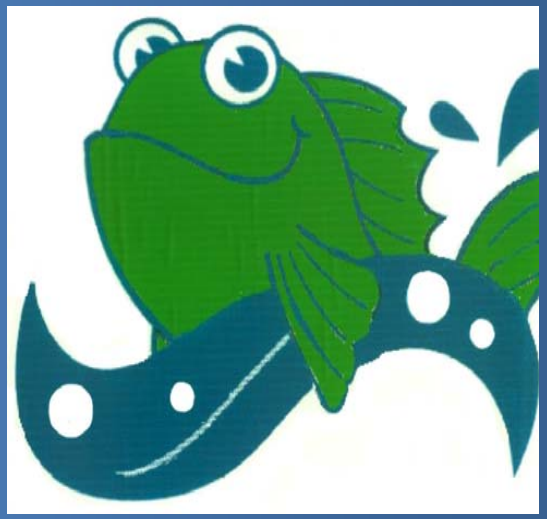
Storm Water Program

4901 Jefferson Hwy.,
Suite E
Jefferson, LA 70121

Phone: 504-731-4612
Fax: 504-731-4607
Email:
jpenvironmental@jeffparish.net


# Jefferson Parish Environmental Affairs

## Storm Water Program



KEEP JEFFERSON PARISH CLEAN & GREEN

KEEP LAKE PONTCHARTRAIN BEAUTIFUL

MANTENGA JEFFERSON PARISH LIMPIO & VERDE

MANTENGA HERMOSA Y LAGO PONTCHARTRAIN

# WHAT YOU CAN DO

## Automobile

- Maintain cars to prevent leaks
- Use containers to catch fluids when working on vehicles
- Do not pour used automotive fluids down the storm drain

## Yard

- Do not sweep or blow grass cuttings, leaves, yard wastes into street or storm drains
- Avoid over fertilizing
- Do not pour lawn & garden products into storm drains

## Pet Waste

- Pick up & properly dispose pet wastes

## Cooking

- Do not pour used grease or other food waste or wastewater into storm drains
- Clean any grease spills

## Construction

- Prevent sand and fill material from running into street and storm drains
- Do not hose concrete wash, sand or mud into street or storm drains
- Do not wash paint brushes off over a storm drain
- Properly containerize trash for disposal


# QUE PUEDEN UDS. HACER

## Automóvil

- Mantener los coches para evitar fugas
- Usar contenedores para recoger líquidos cuando se trabaja en los coches
- No drenar líquidos de automóvil por el desagüé pluvial

## Jardín

- No soplar el césped cortado, hojas, etc. en las alcantarillas
- Evitar excesos de fertelizantes
- No vaciar excesos de fertilizantes o productos del césped por el desagüe de alcantarilla

## Residuos de Mascotas

- Recoger y depositar apropiadamente desechos de mascotas

## Cocina

- Evite vaciar residuos de grasa en drenajes. Recoger cualquier derrame de grasa
- Evite vaciar residuos de mariscos en por drenajes

## Construcción

- Evitar que arena y material de relleno llegue a las calles y en las alcantarillas
- Evitar lavado de concreto, arena y suciedad por el desagüe
- Evite lavar pinceles y brochas sobre el drenaje de las alcantarillas
- Depositar apropiadamente la basura en contenedores

# DROP OFF SITES

**At the following 2 Trash Drop-off Sites**

- **6440 Lapalco Blvd., Marrero**
- **400 David Drive, Metairie,**

**Jefferson Parish residents may drop off automotive waste for recycling:**

- **5 gallons/day of used motor oil antifreeze, gasoline & other automotive fluids**
- **2 used oil filters per day**
- **1 automobile battery per day**
- **5 automobile tires per day**

**Hours of Operation:**
**Tuesday – Sunday 9:00 am – 5:30 pm**
**Daylight saving hours 10:00 am -6:30 pm**

# Lugares de Descarge

**En los siguientes 2 sitios hay entrega de basura**

- **6440 Lapalco Blvd., Marrero**
- **400 David Drive, Metairie**

**Los residentes de la parroquia de Jefferson pueden dejar residuos automotriz para su reciclaje:**

- **5 galones/día de aceite de motor usado anticongelante, gasolina & otros líquidos automotrices**
- **2 filtros de aceite por día**
- **1 batería de automóvil por día**
- **5 llantas de automóvil por día**

**Horas de Operación:**
**Martes – Domingo 9:00 am – 5:30 pm**
**Hora de ahorro de luz diurna 10:00 am - 6:30 pm**

## Do I need a permit for my construction site?

**STEP 1**

Are you disturbing an area equal to or greater than one acre, or are you part of a common plan of development that will disturb more than one acre?

- ☐ NO – Your site is not regulated by DEQ or Jefferson Parish. No action is required, however BMP's are encouraged.
- ☐ YES – GO TO STEP 2

**STEP 2**

Is the disturbed area of your site equal to or greater than 5 acres?

- ☐ NO – GO TO STEP 3
- ☐ YES – Your site is regulated by the large construction general permit (LAR100000). You must submit a letter of intent, prepare a SWPPP, and post a notice near the main entrance of the site.

**STEP 3**

Is the disturbed area of your site equal to or greater than one acre, but less than 5 acres?

- ☐ YES – Your site is regulated by the small construction general permit (LAR200000). You must prepare a SWPPP and post a notice near the main entrance of the site.

For more information on how to obtain a construction site storm water permit, visit the link below:

http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/LPDESPermits.aspx

DEQ LOUISIANA

## Ten Most Common Construction Site Storm Water Violations

Many common storm water violations can be easily corrected. Below is a list of the most common storm water violations at construction sites:

**10. Inadequate maintenance of SWPPP**

**9. Inadequate self-inspection of BMP's**

**8. Poorly managed washouts (concrete, paint, stucco)**

**7. Dewatering and other pollutant discharges**

**6. Improper solid or hazardous waste management**

**5. No BMP's to minimize vehicle tracking onto the road**

**4. Inadequate BMP maintenance**

**3. Poor management of temporary stockpiles**

**2. Missing and/or misunderstood sediment controls**

**1. NO PERMIT**

*Information Provided by:*

**Jefferson Parish Department of Environmental Affairs**
**4901 Jefferson Highway, Suite E**
**Jefferson, LA 70121**

*Funding for this material provided by:*

**The Lake Pontchartrain Basin Restoration Program**

# STORM WATER RUNOFF CONTROL AT CONSTRUCTION SITES

*Guidance developed by*

JEFFERSON PARISH DEPARTMENT OF ENVIRONMENTAL AFFAIRS

***A GUIDE TO DEVELOPMENT, IMPLEMENTATION, AND PERMITTING for***

## *STORM WATER*

*ON YOUR*

## *CONSTRUCTION SITE*

***AND REDUCING IMPACTS TO***

## *WATER QUALITY*

**CONTACT US:**

**JEFFERSON PARISH DEPARTMENT OF ENVIRONMENTAL AFFAIRS**
**4901 JEFFERSON HIGHWAY, SUITE E**
**JEFFERSON, LA 70123**
**(504) 736-6440**
**JPENVIRONMENTAL@JEFFPARISH.NET**

# Common Best Management Practices (BMP's)

## Erosion Control

Erosion Control BMP's stop erosion at its source. Examples include:

- Buffer strips
- Temporary Seeding
- Permanent Seeding and Sodding

## Sediment Control

Sediment Control BMP's slow down runoff, causing sediment to fall out of suspension and remain on site. Examples include:

- Silt fencing / sediment barriers
- Inlet protection
- Filter strips

***Silt fencing used as a sediment barrier.***

## Site Management Techniques

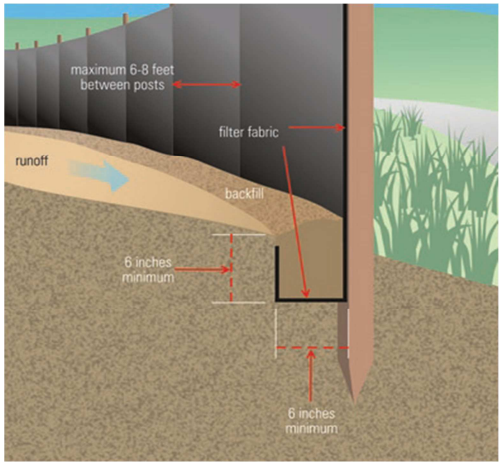
- Pesticide, herbicide, chemical, and petroleum product control
- Phased construction
- Truck Washouts
- Construction site entrance management

***Well maintained site entrance.***

# Best Management Practices Proper Implementation Techniques

***Properly installed silt fence and construction site entrance.***


***Properly installed concrete washout.***




***Proper silt fence installation technique.***

# Buenas prácticas gerenciales communes

## Control de la erosión

Control de la erosión se detiene la erosión en el mismo de la fuente . Ejemplos incluyen:

- zona de separación
- siembra temporal
- siembra permanente y sodding

## El control de sedimentos

Control de Sedimentos ralentiza el escurrimiento, provocando que el sedimento se le caiga de suspensión y permanecen en el lugar. Ejemplos incluyen:

- malla protectora
- protección de entrada
- tiras de filtro

## Técnicas para el control del sitio

- Pesticidas , herbicidas , química, y de control del producto de petróleo
- contrucción por etapas
- lavado de camiones
- gestión de entrada del sitio de construcción


*pintura correctamente almacenados*

***If you need any assistance with storm water compliance, contact the Jefferson Parish Department of Environmental Affairs:***

***JEFFERSON PARISH***
***DEPARTMENT OF***
***ENVIRONMENTAL AFFAIRS***
***4901 JEFFERSON HIGHWAY***
***SUITE E***

***(504) 736-6440***
***JPENVIRONMENTAL@JEFFPARISH.NET***

# The Jefferson Parish Department of Environmental Affairs


**Jefferson Parish Public Works crews clean and flush over 75,000 drains and inlets within 82,000 acres. But we cannot keep this vital infrastructure working properly without your cooperation.**

**Blowing leaves and grass into the street and leaving it there is a violation of section 16-9(b) of the Jefferson Parish Code of Ordinances which states,** *"It shall be unlawful for any person to dump, throw, place or otherwise dispose of cut grass, weeds, trees or tree limbs, trash, garbage or other debris on any public street, right-of-way or pedestrian walkway in Jefferson Parish by the use of a leaf blower, rake, broom or any other means, unless such debris is immediately thereafter removed from the street and containerized for composting or for proper removal and disposal in accordance with the provisions of Chapter 16 of the Code of Ordinances."*

**The continuation of this practice will result in violations being issued and fines of up to $500 may be imposed.**

If you have any questions please call the Jefferson Parish Department of Environmental Affairs between the hours of 8:00 AM TO 4:00 PM at 504-731-4612

**Jefferson Parish Department of Environmental Affairs**
**4901 Jefferson Highway – Suite E, Jefferson, La 70121**
**Phone: 504-731-4612** **Email:** jpenvironmental@jeffparish.net
**Fax: 504-731-4607** **Website:** www.jeffparish.net

## APPENDIX B: DOCUMENTS

1. Guidance Document for Post-Construction Pollutant Controls in Areas of New Development and Re-Development
2. Report Evaluating the Feasibility of Retrofitting Existing Flood Control Devices to Improve Water Quality
3. Current List of I&HR Facilities
4. Allowable Non-Storm Water Discharges

# GUIDANCE DOCUMENT FOR POST-CONSTRUCTION POLLUTANT CONTROLS IN AREAS OF NEW DEVELOPMENT AND RE-DEVELOPMENT

# FOR

# JEFFERSON PARISH

# NPDES MS4 PERMIT

**August 2005**

**Prepared By:**

**Jefferson Parish, Louisiana**

# Table of Contents

# Section 1
# Background and Introduction

The purpose of this guidance document is to meet the requirements of Part II.A.2 of Jefferson Parish's Municipal Separate Storm Sewer System (MS4) permit issued by the United States Environmental Protection Agency (USEPA) Region VI. This permit has been created by the USEPA under the National Pollutant Discharge Elimination System (NPDES) to address the water quality issues associated with the storm water runoff from the drainage areas included in the MS4 permit. The implementation and augmentation schedule of the permit (Table III.A) states the requirement for this guidance document:

> "Submit an approvable guidance document that provides technical criteria for controls designed to minimize the discharge of pollutants from areas of new development and re-development after construction is complete. Criteria (are) to be used during planning and design stages."

In Part II.A.2 of the permit, Jefferson Parish is charged with preparation of a planning process to implement these controls based on the following goals:

a. New development – limiting increases in the discharge of pollutants in storm water as a result of development, and
b. Re-development – reducing the discharge of pollutants in storm water.

Land development changes both the hydrologic regime of a watershed and the chemical constituents in the runoff. There are three categories of best management practices (BMPs) for controlling urban storm water pollution resulting from development and redevelopment: land-use planning, source controls and treatment controls. Changes to an urban watershed are best controlled during the early phases of projects through land-use planning. However, because land-use controls are often difficult to implement, source controls are the next tier of controls that should be followed. When land-use and source controls are not sufficiently effective to prevent pollution, treatment controls may be used to address the problem. (WEF/ASCE, 1998)

Each category of BMPs listed above will be expanded upon in the next section of this document. However, some controls that are typically successful in other areas, within each category of BMP, will not be applicable to the Jefferson Parish MS4 due to its unique physical arrangement. In order to provide some perspective on the unique nature of this type of permit and the practicable BMPs for Jefferson Parish, a brief description of the drainage and flood control system is provided. A very detailed history and maps of this system are included in the MS4 permit submittal and should be reviewed concurrently with this document for first time readers. Because the purpose of this document is to supplement that material which has already been developed, it is important to have a thorough understanding of the physical system being discussed in this document.

Jefferson Parish is bounded on the north by Lake Pontchartrain (St. Tammany Parish), to the east by Orleans and Plaquemines Parishes, to the west by St. Charles and Lafourche

Parishes and to the south by the Gulf of Mexico. The drainage areas included in the MS4 are those portions of Jefferson Parish adjacent to the Mississippi River. The portion of Jefferson Parish north of the river is referred to as the East Bank, while the portion south of the river is referred to as the West Bank. Because much of the land in Jefferson Parish is at an elevation at or below mean sea level (MSL), the entire East Bank and a portion of the West Bank are surrounded by flood and hurricane protection levees. The levees bordering the Mississippi River are at approximately elevation +28 feet above MSL, while the levees bordering Lake Pontchartrain, the Barataria Basin and adjacent Parishes average about +16 feet above MSL. The difference in levee elevations is due to the separate nature of the threats that they protect against. The Mississippi River levees are intended to protect against flood stage water levels in the river, while the remaining levees are intended to protect against hurricane induced tidal surges in both Lake Pontchartrain and from the Barataria Basin to the south.

As a result of this system of levees, there is no gravity drainage discharge outlet from within the MS4. Rainfall from this area is removed entirely by a system of conveyance canals and pumps. The canals transport the runoff from the local gravity collection basins to the pumping stations. High volume, low-lift pumps are used at the pumping stations to lift the water up from the canals to the higher water surface elevation of either Lake Pontchartrain or to the lakes, bayous and canals of the Barataria Basin. At this time there are no MS4 discharges to the Mississippi River.

This guidance document will summarize the practices to which new development and re-development projects in Jefferson Parish must adhere. While some of the practices were established originally for objectives other than water quality, such as flood control or enhanced aesthetic value, they nonetheless provide water quality benefits. Additionally, many ordinances and programs currently in place or being developed are directly related to providing enhanced water quality by reducing pollutants entering the MS4.

# Section 2
# Definitions

This section defines the three categories of BMPs that are proposed for mitigating urban storm water pollution. As stated earlier, these categories are: land-use planning, structural controls and treatment controls. The definitions and examples of these categories are derived from the Urban Runoff Quality Management practice manual co-authored by the Water Environment Federation (Manual of Practice No. 23) and the American Society of Civil Engineers (Manual and Report on Engineering Practice No. 87) in 1998. Guidance practice manuals provided by these two organizations are commonly used as industry standard references and are therefore considered the standard by which this Jefferson Parish guidance document is developed. Later sections of this document will describe Jefferson Parish's practices within each of these categories.

## LAND-USE PLANNING

Land-use controls involve adoption of a comprehensive and integrated set of environmental restrictions to govern the development process. Typically, a development ordinance is adopted by a community and administered by a planning authority, such as Jefferson Parish. This type of ordinance will often mandate a minimum level of environmental site planning during development.

## SOURCE CONTROLS

A source control program for a land development project may include the following features:

- Identification of possible post-construction outdoor activities that may use or generate concentrated or high-risk pollutants at the site;
- Prohibition of these outdoor activities, where practical;
- Designation of specific areas for activities that must be performed outdoors;
- Installation of structural source controls in designated areas, i.e. covers, enclosures, containment systems, or connections to sanitary sewers;
- Placement of conditions on the development project for maintaining any of the above areas included.

Outdoor activities may include material storage, waste handling, material loading or unloading, vehicle and equipment maintenance, and various specific work tasks typically conducted outdoors.

## TREATMENT CONTROLS

An effective system of treatment controls addresses non-point or distributed sources of pollutants throughout the drainage area that affect beneficial uses but cannot be effectively controlled at the source (i.e. automobile leaks and air deposition). When coupled with proper land-use controls, the treatment processes for non-point source storm

water pollution can be integrated to the landscaping, drainage and flood control system and other open spaces of development projects. When properly designed, they can become amenities rather than interferences to development projects. Some examples of treatment controls are:

- Grass-lined channels to convey flood waters and potentially reducing pollutant loads.
- Ponds designed to attenuate peak discharges to desired levels and reduce pollutant load before discharge. Pollutants are reduced by detaining "first-flush" runoff from large storms and all runoff from small storms long enough for sediments to settle and biological processes to act on degradable materials.
- Physical barriers (such as baffles or screens) to prevent the discharge of floatables.

## BEST MANAGEMENT PRACTICES FOR EXISTING MUNICIPAL DRAINAGE SYSTEMS

The Jefferson Parish MS4 includes street gutters, inlets, catch basins, storm drain pipes, constructed canals (both grass-lined and concrete reinforced), and drainage pumping stations. In general, two categories of BMPs are appropriate for such urban drainage systems:

- Various techniques for cleaning drainage system components or preventing non-storm water discharges to the drainage system in the first place (source controls); and
- Various devices that can be retrofit to the drainage system to attenuate the rate of runoff or remove and assimilate pollutants (treatment controls).

# Section 3
# Land-Use Planning and Controls

As defined earlier, land-use planning, when practicable, may be the most effective method of controlling changes to the hydrologic regime of a watershed and the chemical constituents in the runoff. Jefferson Parish already regulates land-use for areas of new development and re-development. These existing regulations meet some of the generally accepted criteria for mitigating storm water pollution.

## COMMERCIAL PARKWAY OVERLAY ZONE (CPZ)

The purpose of the Commercial Parkway Overlay Zone (CPZ) is to superimpose an overlay zone utilizing landscape and buffer standards to enhance the general quality of commercial and office developments or structures by minimizing development impacts on the drainage conveyance system, decreasing the amount of impervious surfaces, and improving pollutant removal. The complete CPZ ordinance is included as Appendix A of this document. Because the CPZ includes landscaping requirements that may function as filter strips, a summary of filter strips and the associated Jefferson Parish technical criteria are provided below.

### Filter Strip Pollution Reduction Benefits

Filter strips remove pollutants through the filtering action of the grasses, deposition of pollutants due to low flow velocities, nutrient uptake by grasses, and by infiltration into the subsoil (runoff elimination). Each of these benefits helps to negate the adverse environmental impacts resulting from development and land use changes (Shaver, 1986). Results from some small test plots (Barfield et al. 1977) and several independent modeling studies (Wong and McCuen, 1982; Pitt, 1986; Overcash et al., 1981; Tollner et al., 1982) all suggest filter strips are effective in removal of particulate pollutants such as sediment, organic material, and many trace metals (Schueler, 1987).

Removal of soluble pollutants in filter strips is accomplished when the pollutants infiltrate into the soil and are subsequently utilized by the rooted vegetation. Vegetation growing in these filter strips acts as both a physical filter which causes gravity settling of particulates by regulating velocity of flow, and as a biological sink when direct uptake of dissolved pollutants occurs. Pollutant removal also occurs as the storm water contacts the soil surface and infiltrates into the underlying soil. Dissolved pollutants are adsorbed onto soil particles, which can be an important removal mechanism for both dissolved heavy metals and phosphorous by undergoing ion exchange with elements in the soil. In addition, biological activity in the soil can metabolize organic contaminants.

Optimum pollutant removal is a factor of overland sheet flow (minimal channelization), flow velocities, turf thickness, and soil permeability. Filter strips can be equally effective as an additional construction erosion control measure.

Trees, shrubs and ground covers provide many storm water management benefits. When mature, these plants form a canopy that intercepts rainfall before it reaches the ground.

Rainfall not directly reaching the ground is more likely to be infiltrated in the spongy layer of organic matter that accumulates under plants. Consequently, runoff volumes and peak rates are reduced.

## Cost Effectiveness

Filter strips provide a relatively inexpensive mechanism for runoff reduction and pollutant retention. Filter strip construction costs are negligible when an existing pervious area is reserved prior to lot development.

Integrating multi-use treatment controls such as filter strips promotes cost effectiveness and other benefits by reducing capital costs, saving land, reducing maintenance, operation, and replacement costs, reducing planning and design time, and stimulating integrated, comprehensive planning (WEF, 1998).

## CPZ Ordinance – Technical Criteria

Jefferson Parish has in place numerous regulations for non-residential developments pertaining to filter strip requirements for developing and re-developing sites. The following is a summary of the applicable CPZ filter strip technical criteria, separated by subheading:

**Filter Strip Sizing Criteria**

4.A.1 The first twenty (20) feet of the fronting property line shall be landscaped in accordance with subsection 6: Landscape and Buffer Requirements.

6.B.1 A minimum of 10% of the vehicular use area of the interior of the lot shall be landscaped.

6.B.3 Landscaped islands or medians within the vehicular use area shall provide interior lot landscaping:

a. One landscaped island or median shall be placed for every twelve (12) parking spaces and shall be a minimum of sixty (60) square feet.

b. The landscaped island or median shall consist of a minimum of one (1) tree and surfaced with shrub(s) and ground cover, or grass, and excluding paving.

6.C.1 On the perimeter(s) of the lot adjacent to abutting residential property, a continuous, unbroken barrier shall be constructed. This barrier can be an earthen berm not less than five feet (5') in width.

6.C.2 One tree shall be planted for each 35' of the required barrier or fraction thereof. Each such tree shall be planted in at least twenty-five (25) square feet of planting area. Each such planting area shall be landscaped with grass, ground cover, or other landscape material excluding paving in addition to the required tree.

6.C.3 When the abutting property is zoned for nonresidential uses, either of the following requirements shall apply.

a. Only the tree and planting provisions as described in Subsection 6.C.2 above are required for the perimeter; or,

b. A continuous, unbroken barrier shall be constructed. This barrier can be an earthen berm not less than two and one half feet (2-1/2') in width. Such planting strip shall be landscaped with shrubs a minimum of every ten (10) feet and shall be landscaped with grass, ground cover or other landscaping in addition to the shrubs.

6.D On the perimeter(s) of the lot adjacent to public rights-of-way, a strip of land of at least five (5) feet in depth located between the right-of-way and the off-street parking or other vehicular use area shall be landscaped to include one tree for each fifty (50) feet or fraction thereof. Such trees shall be planted in a planting area of at least twenty-five (25) square feet. The remainder of the required landscape strip shall be planted with grass, ground cover or other landscape material and exclusive of paving.

**Filter Strip Material Construction and Maintenance Standards**

6.G.3 Groundcover

b. Sod shall be employed when grass is used as a groundcover.

c. Non-living material such as rocks, pebbles, sand, wood mulch or chips shall be placed at a minimum depth of three inches (3"). These materials shall serve to assist vegetative establishment and encourage increased infiltration.

6.J It is the responsibility of the owner, tenant or their agent to maintain landscaped areas in an attractive, healthy condition and kept free from debris.

6.K Existing, healthy plant material on a site may be used as a credit toward fulfilling the landscaping requirements. This standard encourages unaltered native soils and maintenance of existing infiltration rates and vegetation.

**Filter Strip Implementation Review and Enforcement Standards**

8.A Prior to the issuance of a building permit, site plans for the proposed development shall be submitted to the Department of Planning for review and determination if the proposal meets Commercial Parkway Overlay Zone requirements. If CPZ requirements are not fully met, site plan review before the Planning Advisory Board and Parish Council is required.

8.B.2.d All site plans must include a landscaping plan for review, including the following:

1. Dimensions of landscaped areas.
2. Landscaping legend – size, type, location of tree, shrub, & grass cover
3. Site maintenance plan

## MIXED USE CORRIDOR DISTRICT

As stated in the ordinance, "The purpose of the Mixed Use Corridor District (MUCD) is to provide a superior means for developing mixed land uses along major transportation corridors as identified on the Major Street Plan of Jefferson Parish, through landscape and buffer requirements, general design standards and sign regulations. The MUCD offers flexibility, allowing selected permitted uses to be integrated into a unified plan." The complete ordinance is provided as Appendix B to this document.

Sections of the MUCD ordinance relevant to post-construction pollution control includes population density limitations, general landscaping and buffer requirements, tree survey and preservation provisions, design standards for public service infrastructure, and landscaping and buffering standards for re-developments. These are described in more detail below. Site plans for proposed development or re-development within this zoning district will be reviewed through the building permit process. Additionally, some projects will require review by the Department of Planning where the MUCD regulations are not fully met and a variance is required.

### MUCD Ordinance - Technical Criteria

A.1. A setback of 20 feet is required in the front yard and is required to be landscaped with grass, trees and shrubs in addition to the landscape requirements in Subsection 6.

A.2-3. In general, side yards must be a minimum of 10 to 15 feet and rear yards are 20 feet.

B.1. Lot areas are specified as minimum amounts of area for different dwelling classifications.

6.A. Definitions of landscape and buffer standards terminology provides that most plants (i.e. trees, shrubs) required by the MUCD zoning ordinance will be self-supporting species normally grown in Southeastern Louisiana.

6.B. Landscaping requirements are spelled out for various scenarios that may occur within the MUCD, e.g. commercial next to residential, commercial abutting industrial, etc. Minimum requirements are provided for new developments and additional requirements are provided for re-developments that recognize the nature of existing developments and limitations driven by lot size.

In summary, the MUCD generally reduces the density of development within the zoning district when compared to the pre-existing zoning. This is accomplished in part by the new requirement for setbacks in side yards for cases where non-residential development is abutting other non-residential development. Where buffer zones have been required for any non-residential development next to residential, that is not the case for non-residential. These setbacks not only serve to decrease density but add green space requirements, thereby decreasing allowable impervious areas of development.

## RESIDENTIAL ZONING

All residential zoning classifications in Jefferson Parish include front, rear and side yard setback requirements for structures. Certain residential zoning classifications in Jefferson Parish, such as R-1b, R-1c and R-1d, increase the minimum lot sizes and setbacks and include provisions to protect native trees and landscaping. Additionally, the Old Metairie Conservation District recognizes the importance of trees for environmental, aesthetic and historical purposes and provides additional requirements so that predevelopment tree cover is maintained.

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# Section 4
# Source Controls

Jefferson Parish has in place an extensive ordinance code addressing pollution reduction for storm water discharges to surface waters. These housekeeping, hazardous material storage and handling, erosion control, litter control and sewage disposal ordinances seek to eliminate pollution at its source, thereby reducing pollutant loading and capital costs associated with treatment controls.

The applicable practices, programs and ordinances are outlined below by subject heading. Please refer to the appropriate section of the attached ordinances for more details (Appendix C).

## MAINTENANCE (HOUSEKEEPING) SOURCE CONTROLS

Through the Jefferson Parish MS4 permit and the industrial pretreatment program, Jefferson Parish has in place programs to detect pollution sources, inspect sites, require monitoring and enforce the use of appropriate maintenance and housekeeping BMPs: the Illicit Discharge Inspection Program, the Wet Weather Screening Program, the Construction Site Inspection Program and the Industrial and High Risk Runoff Inspection and Monitoring Programs. The Jefferson Parish Department of Environmental Affairs, the department responsible for coordination of the MS4 permit activities, reviews plans for non-residential developments and re-developments during the Jefferson Parish building permit process. During this time, the Department of Environmental Affairs comments on the need for construction and post-construction storm water pollution prevention plans, based on current federal and state regulations.

## POLLUTION MONITORING, REPORTING, AND ENFORCEMENT

The purpose of the pollution monitoring, reporting, and enforcement standards are to provide adequate notification and response protocol to minimize surface water impacts resulting from pollutant spills.

13-6 Immediate reporting to 911 of accidents or incidents involving hazardous materials that pose an exposure risk to any sewage, drainage, or water line.

27-163 Monitoring and reporting requirements and reporting of accidental discharges so that corrective action may be taken.

28-10 Immediate reporting to office of communication services (911) of derailment or release of hazardous materials.

33-1 to 33-6.5 All subdivision proposals shall have sewerage and drainage facilities reviewed by Department of Public Works, Planning Advisory Board.

34-4 Requires all plumbing and drainage installation for swimming pools to conform with Parish building code.

## HAZARDOUS MATERIAL STORAGE AND HANDLING

Any business which stores liquids in above-ground tanks, or collects and transports pollutants shall comply with the following practices. The purpose of these sections is to reduce spill frequency, provide safe material handling protocol, and ensure compliance with Department of Health standards.

16-4 Solid waste containers to be watertight and leakproof. Household hazardous waste to be handled and stored in accordance with State requirements.

16-6 Vehicles or containers used for the collection and transportation of toxic or hazardous wastes shall be durable, enclosed and leakproof, and shall be constructed, loaded, moved, and unloaded in a safe manner and in compliance with the applicable regulations of the State Department of Health. Vehicles or containers used for collection and transportation of garbage shall be covered, leakproof, durable metal, and of easily cleanable construction. These shall be cleaned at appropriate intervals to prevent pollution and shall be maintained in good repair.

16-101 to 16-108 Regulates transport and disposal of medical waste, including commercial and residential medical waste.

20-120 Restrictions on the use of phenoxy-based compounds to prevent runoff and/or drift.

26-4 Requires sewerage disposal, water and fire protection for all living accommodations, campers, and trailers and the submittal of proof to the Parish Council.

## LITTER CONTROL

Litter control involves the removal of litter from streets and other surfaces before runoff or wind moves these materials to surface waters. This practice will prevent litter from becoming pollution as well as improve aesthetics of the area.

Leaves and lawn clippings are a major source of phosphorous in urban runoff. By removing these materials before they enter surface waters, phosphorous loadings can be

reduced. In addition to leaves and lawn clippings, litter to be controlled includes pet waste, trash, oils, and chemicals. Limiting introduction of these primarily organic chemicals can help reduce oxygen demand and bacteria.

7-28 Clean-up and disposal of animal excreta in sanitary manner (Pooper Scooper).

16-9 No person shall litter any public or private premises. Also prohibits dumping or blowing of grass clippings into streets or storm drains.

16-10 Prohibits littering and dumping of any debris, trash, trees, or garbage into drainage ditches, canals, or catchbasins.

16-11 Prohibits disposal of wastes by burning on any public or private premises.

19-3 Prohibits accumulation, collection or the keeping, depositing on or scattering on any person's premises any of the following: trash, debris, refuse, junk, abandoned equipment, machinery, refrigerators, freezers, air conditioners, cans, containers, abandoned, or noxious matter.

27-71 Makes dumping of trash or garbage or the placing of mail boxes, screens, etc., or placement of objects in drainage system unlawful.

37-19 No person shall use the neutral grounds, parks, sidewalks, or public places to dump grass clippings, tree trimmings, or refuse of any nature.

## EROSION CONTROL

Erosion control is primarily used to protect water quality. In addition to causing turbid conditions, fine sediments carry a significant load of nutrients and other pollutants that can harm water quality. The ordinance seeks to limit incessant bank erosion due to wave action.

39-8 Limiting wave action on Bayou Barataria.

Additionally, erosion control is achieved in open canal system through stabilized canal banks achieved either through vegetation or concrete. The vegetation requirements of residential zoning ordinances, the CPZ ordinance and the MUCD ordinances also provide some measure of erosion control. On industrial or construction sites, federal and state storm water regulations require that erosion control measures be taken. The Jefferson Parish Department of Environmental Affairs inspectors note the presence or absence of such measures during inspections.

## VEHICULAR POLLUTION

36-97 Prohibits repair of automobiles and trucks on public streets and sidewalks.

## STRUCTURAL SOURCE CONTROLS

### Sanitary Sewage Connection or Treatment Requirements

Jefferson Parish requires connections to the sanitary sewer system for most developments within the MS4. Where a connection to the sanitary sewer system is not feasible, minimum levels of treatment are required by the State of Louisiana Department of Health and Hospitals (LDHH) enforced by LDHH and Jefferson Parish. Because Jefferson Parish recognizes that proper sewage disposal avoids direct discharges of sewage and wastewater to surface waters, ordinances are in place that regulate these matters. These ordinances are depicted in further detail below.

27-142 through 27-151 Sewage Disposal Law – Regulates proper disposal of sewage waste.

27-157 through 27-165 Drainage Disposal Law – Prohibits the discharge of wastewater into the storm water drainage system.

27-159 Prohibits the discharge of waste into storm water drainage system and gives basic requirements of the discharge of waste.

27-161c Specific prohibitions and limitations concerning the discharge of wastewater into storm water.

29-3 Discharge refuse, oil, or other objectionable matter into the ditches or gutters of public streets or roads is prohibited.

### Storm Sewer Structure Inspection and Maintenance

Regular conveyance structure inspection and maintenance intervals help reduce leakage from sewer and waste drainage lines to surface waters.

27-16 Requires inspection of all sewerage and drainage lines installed in the Parish to ensure tightness.

# Section 5
# Treatment Controls

As stated in the definition of treatment controls, an effective system of treatment controls addresses non-point or scattered sources of pollutants throughout the drainage area that affect beneficial uses but cannot be effectively controlled at the source (i.e. automobiles, air deposition). Treatment controls in Jefferson Parish include storm water detention requirements, an extensive network of grass-lined and concrete stabilized canals, and physical barriers that prevent the discharge of floatables from the MS4 to receiving waters.

## STORM WATER DETENTION ORDINANCE

Effective on January 18, 1997, the Jefferson Parish Council passed a resolution requiring that storm water runoff detention provisions be included in all proposed developments (both new and re-development), other than single family residential, totaling ten thousand square feet or more (all phases), and all single family residential developments totaling five acres or more (all phases). The sites must be designed to be capable of attenuating peak runoff during storm events such that the post-construction rate of runoff from a ten year storm event does not exceed the pre-construction rate of runoff for a ten year storm event. This ordinance is provided as Appendix D of this document. In many cases, the requirements of the ordinance are met through storm water retention or detention, typically in parking lots or constructed ponds. The Jefferson Parish Storm Drainage Design Manual (Manual) (1981) states that,"…in most cases, it can be shown that [runoff] storage is more economical than increasing downstream conveyance capacity. Storage facilities should be planned and designed to assure an effective and efficient operation and maintenance program."

For rainfall storage, the Manual recommends that storm water detention on parking lots consist of "…using the paved parking areas to channel storm water to grassed or gravel filled areas for maximum infiltration and a decrease in overland flow." Recreational areas, roof tops, property line swales and porous pavement are also listed as potential areas for storage of rainfall. However, due to the limitations in storage capacities that may occur, site development conditions, soils limitations and other related constraints may require that more than one method be used.

Offstream storage, channel storage and onstream storage are listed in the Manual as methods for dealing with runoff. Multipurpose use of any rainfall or runoff storage system is encouraged. Design engineers are instructed to consult early in the planning stage of a project with the Jefferson Parish Department of Planning and the Department of Parks and Recreation for maximum land-use efficiency. Hydraulic design criteria for these methods of storage are provided in the Manual. This Manual is included with this document as Appendix E.

## CANALS

The Jefferson Parish MS4 consists largely of an interwoven network of canals and drainage pumping stations. These canals perform essentially as retention basins providing sedimentation and some additional pollutant removal prior to discharge of storm water to Lake Pontchartrain or the various waters of the Barataria Basin. This is evidenced by the regular need for dredging the canals to remove the accumulated sediment. Many of the canals are earthen with grassy slopes and bottoms, which may provide an enhanced level of pollutant removal. However, because these types of canals tend to harbor the nutria which destroy the banks by burrowing and increase fecal counts due to their waste products, the water quality benefit from the grassed slopes may be negligible. Other canals have been reinforced with concrete side slopes and riprap bottoms for stabilization and increased capacity purposes. Both types of canals, regardless of construction, will serve as retention basins and provide some level of pollutant removal.

## PHYSICAL CONTROLS - SCREENING

Current design standards for catch basin inlets include grating over all inlets with a maximum of a two-inch clear space. In addition, the drainage pumping stations are equipped with bar screens for pump protection that have a maximum clear space between the bars of three and a half inches. However, the bar screens often provide removal of items smaller than three and a half inches because the accumulation of material on the screens at the water surface decreases the effective clear spacing of the screen. Through these methods of screening, floatables are reduced significantly, as evidenced by the amount of solid waste that is collected during routine maintenance.

## CATCH BASIN DESIGN CONTROLS

A recent trend in the storm water management industry has been the advertisement of catch basin design modifications that can be made to provide enhanced pollutant removal. One such option is the installation of a “hood” on the outlet pipe of a catch basin that will act as a baffle to prevent floatables from being discharged through gravity drainage outfalls. However, this is not an appropriate application in Jefferson Parish because all drainage is screened prior to discharge.

Additional design modifications receiving a great deal of publicity are catch basin inserts of several varieties. Some of these are actual inserts, i.e. filter cartridges, while others are replacement structures which are said to trap pollutants. Currently, the California Department of Transportation (CalTrans) is involved in large storm water monitoring and research projects. One of the things they are doing is designing, installing, and monitoring a number of BMP retrofit technologies (i.e., things they can do to existing highways, drainage systems, maintenance yards, etc.), including testing of catch basin inserts of several varieties. Additionally, they are also testing various infiltration technologies (basins, trenches) for comparison. This is a comprehensive field testing

program of these devices, and the testing data from this program provides a great source of information. Some descriptions and results of this program are contained in the Jefferson Parish Storm Water Management Program section entitled *Report Evaluating the Feasibility of Retrofitting Existing Flood Control Devices to Improve Water Quality*. However, it is anticipated that many of these modifications will not be very effective over the long run. Resuspension of pollutants is viewed as a hindrance to pollutant removal because pollutants that are trapped early in a rainfall season are often resuspended and then discharged in later storms. Additionally, maintenance is an issue of great concern. Currently, no one really knows how often they have to be cleaned (or filter cartridges replaced), especially in different climates.

The USEPA, is compiling a National Storm Water BMP Database that will be organized by pollutants and contain associated BMPs to addresses the particular concerns. The long-term goal is to improve the technical design of BMPs and to match their selection and design to local storm water problems. The storm water industry is anxiously awaiting the results of this database for solving storm water issues. The USEPA currently has a National Menu of Best Management Practices for Stormwater that provides guidance of practices municipalities can use to develop and implement their stormwater management programs.

Because of the great deal of information that will become available in the short term and the unknown nature of maintenance and applicability of some of these options, it is recommended that Jefferson Parish review the results of the USEPA database and the CalTrans program before making a potentially large capital and O&M commitment.

# Section 6
# Conclusions

Post-construction pollutant control in areas of new development and re-development is currently achieved in Jefferson Parish through a variety of controls. These include land-use planning, source controls and treatment controls. Through a combination of these controls, as detailed in the earlier sections of this report, Jefferson Parish is able to require and enforce changes in storm water management practices in the higher risk commercial and industrial areas.

Suggested modifications to the current land-use planning controls are provided in the following section. These modifications may serve to strengthen or extend the current controls for increased water quality benefits. Where Jefferson Parish is able to improve the water quality of the storm water leaving the MS4, direct results in improvements in the water quality of Lake Pontchartrain and the waters of the Barataria Basin will likely result.

While it is often difficult to provide water quality improvements in existing urban drainage systems, Jefferson Parish has made significant efforts in this area by using various techniques for cleaning drainage system components, preventing non-storm water discharges to the drainage system in the first place (source controls), and the utilization of treatment controls slow the rate of runoff or remove and assimilate pollutants.

# Section 7
# Suggested Modifications

## DEVELOPMENT OF AN ORDINANCE FOR REDUCING ALLOWED IMPERVIOUSNESS FOR NEW DEVELOPMENTS AND RE-DEVELOPMENT AREAS

In many areas, such as Jefferson Parish, promotion of open or green space through zoning has an indirect effect on storm water runoff by reducing the allowable impervious space of a development. These open or green spaces are often promoted through setback requirements. In some areas, such as commercially or industrially zoned areas, limitations are set on the percentage of allowable impervious areas on a site. The range for such limitations is typically from 75% to 97% of the site may be impervious, with a median of approximately 85%. New developments are often required to reserve more than 20% of the land area as green space.

Currently, the Jefferson Parish CPZ ordinance requires that ten percent of the vehicular use area be landscaped in addition to green space frontal setbacks. Consideration is being given to add side yard setbacks, a portion of which must be landscaped, to the CPZ similar to the MUCD requirements. This modification is strongly encouraged for the purposes of storm water management. Additionally, it is recommended that the vehicular use area landscaping requirements be reviewed for alternatives so that they might improve their functionality as filter strips.

Jefferson Parish is encouraged to review the landscaping requirements included in the CPZ and the MUCD for applicability Parish-wide. This modification would reduce the level of confusion with current zoning requirements as to which commercial properties must comply and which are exempt. Furthermore, such a modification would increase the overall post-construction pollutant control system in Jefferson Parish with a result of enhancing water quality. Additionally, it is recommended that a green space ordinance be investigated for all zoning types, including residential, and that a goal of 20% of land area as green space be considered where applicable.

## PAVING MODIFICATIONS

Paving requirements for residential off-street parking should be reviewed to determine if alternate construction methods, including the use of gravel, shell or limestone materials or paving stones, would provide equal reliability for these low traffic volume areas. The inclusion of these construction methods as acceptable alternatives to impervious concrete or asphalt would increase the likelihood of their use since a variance would no longer be required.

## DETENTION FACILITIES

In addition, it is recommended that the Jefferson Parish Department of Engineering consider a revision of the Storm Drainage Design Manual to encourage the construction

of safe, aesthetically pleasing, potentially multi-purpose, detention facilities, as the first option when addressing storm water management issues.

# APPENDIX A

# SECTION XIII G COMMERCIAL PARKWAY OVERLAY ZONE

1. PURPOSE

The purpose of the Commercial Parkway Overlay Zone (CPZ) is to superimpose an overlay zone utilizing landscape and buffer standards to enhance the general quality of commercial and office development or structures located on major streets as delineated in the Major Street Plan for the Parish of Jefferson; by providing buffers to neighboring residences and other commercial uses; increase public safety by guiding traffic; by minimizing the impact of commercial development and structures on the drainage system; by decreasing the amount of paved area; and by coordinating green space and signage in commercial and office areas. Commercial Parkway Overlay Zone requirements are imposed in addition to the underlying zoning district regulations and development and structures within the overlay zone must conform to the requirements of both the district and the overlay zone, or the more restrictive of the two.

2. PERMITTED USES

A. Permitted uses shall be those allowed in the underlying zoning district.

B. All uses except single family and two family dwellings shall be required to comply with CPZ requirements.

3. HEIGHT REGULATIONS:

Height regulations shall be in accordance with the underlying zoning district.

4. AREA REGULATIONS:

A. Area regulations concerning front, side and rear yard and lot area shall be in accordance with the underlying zoning district. However, in addition to front yard requirements of the underlying district, the first twenty (20) feet from the property line shall be landscaped in accordance with standards set in subsection 6: Landscape and Buffer Requirements of this section.

1. Developments may utilize existing rights-of-way or portions thereof to comply with the front yard landscaping requirement, subject to written approval by the appropriate Parish and/or State department along with site plan review referenced in Section 10, Site Plan Review of the CPZ.

5. PARKING REQUIREMENTS

A. Parking space requirements are listed in Section XVIII, Off Street Parking and Loading Regulations in the Zoning Ordinance.

B. All parking areas shall be paved and include landscaped islands or medians and sidewalks, as per subsection 6: Landscape and Buffer Requirements.

C. Additionally, said parking spaces shall be oriented so that no vehicle is required to back directly into a street right-of-way.

6. LANDSCAPE AND BUFFER REQUIREMENTS

A. General

Landscaping requirements in this section are minimum standards and applicable to vehicular use areas used for the parking of four or more vehicles, and for property the primary function of which is for vehicles to traverse back and forth to parking spaces, service bays and loading or unloading areas. The landscaping requirements shall provide effective buffering of all vehicular use areas from streets or other views. Development within the Commercial Parkway Overlay Zone shall be encouraged to incorporate waterscapes, fountains, clocktowers or other architectural features with landscaping to add to aesthetics and visual attraction.

B. Interior of Lot

1. A minimum of ten percent (10%) of the vehicular use area of the interior of the lot shall be landscaped for the purpose of guiding and separating vehicular and pedestrian traffic.

2. The front twenty (20) feet from the property line shall be landscaped in accordance with provisions set in subsection 6(D) Perimeter of lot Adjacent to Public Rights-of-Way. Fountains, waterscapes, clocktowers or other architectural features shall be encouraged within this and other required landscaped areas to add to aesthetics and visual attraction of the site.

3. Interior lot landscaping shall be provided by landscaped islands or medians within the vehicular use area.

   a. One such landscaped island or median shall be placed for every twelve (12) parking spaces and shall be a minimum of sixty (60) square feet.

   b. The landscaped island or median shall consist of a minimum of one (1) tree and surfaced with shrub(s) and ground cover, or grass, and excluding paving.

C. Perimeter of Lot Adjacent to Abutting Property

1. On the perimeter(s) of the lot adjacent to abutting residential property, a continuous, unbroken barrier is required for the purpose of buffering off-street parking or other vehicular use areas exposed to the abutting property. The barrier shall be located between the common lot line of the abutting property, and the off-street parking and/or other vehicular use area. The barrier shall be a minimum of seven feet (7') in height consisting of opaque material such as a masonry or wood fence, an earth berm, an opaque hedge or any combination thereof. If such barrier consists of all or in part of plant materials, such plant materials shall be planted in a strip of not less than five feet (5') in width.

2. In addition, one tree shall be provided for each thirty-five feet (35') of the required barrier or fraction thereof. Such trees shall be located between the common lot line

of the abutting property, and the off-street parking or other vehicular use area. Each such tree shall be planted in at least twenty-five (25) square feet of planting area with a minimum width of at least five (5) feet. Each such planting area shall be landscaped with grass, ground cover or other landscape material excluding paving in addition to the required tree.

3. When the abutting property is zoned for nonresidential uses, either of the following requirements shall apply.

   a. Only the tree and planting provisions as prescribed in Subsection 6, paragraph C(2) above are required for perimeter; or,

   b. An earth berm shall be installed along perimeter with a minimum height of two (2) feet constructed on a planting strip with a minimum width of two and one half (2 1/2) feet. Such planting strip shall be landscaped with shrubs a minimum of every ten (10) feet and shall be landscaped with grass, ground cover or other landscaping in addition to the shrubs.

D. Perimeter of Lot Adjacent to Public Rights-of-Way

On the perimeter(s) of the lot adjacent to public rights-of-way, a strip of land of at least five (5) feet in depth located between the right-of-way and the off-street parking or other vehicular use area shall be landscaped to include one tree for each fifty (50) feet or fraction thereof. Such trees shall be located between the abutting right-of-way and the off-street parking or other vehicular use area and shall be planted in a planting area of at least twenty-five (25) square feet. In addition, a hedge, wall, earth berm, or other durable landscape barrier of a minimum of two (2) feet in height shall be placed along the perimeter of such landscape strip. If said barrier consists of nonliving material, one vine or shrub shall be planted every ten (10) feet and abutting the barrier. The remainder of the required landscape strip shall be planted with grass, ground cover or other landscape material and exclusive of paving.

E. Protection of Landscaped Areas

The placement of barrier curbs is required to protect all landscaped areas from vehicular damage.

F. Service Bays/Drives

1. All service bays, loading and unloading areas, trash receptacles and dumpster area must be screened by a fence with a minimum height of seven (7) feet and consisting of wood, brick or masonry. This fence is in addition to perimeter landscape requirements set in this section.

2. Service bays and drives and trash receptacles and dumpster areas shall not be located on the same side of the development site as residential development or structures unless a continuous fully landscaped buffer strip is located between the service area and the common lot line of the residential development or structures and shall consist of a minimum width of ten feet (10'). One tree shall be provided

for every thirty-five feet (35') or fraction thereof of the buffer strip and additionally planted with shrubs and groundcover, or grass, and excluding paving. Additional buffer strip area may be required, depending on the size and intensity of the commercial service area.

3. Service bays and drives and trash receptacle and dumpster areas shall be oriented in such a way that in the process of loading and unloading, no vehicle will block the passage of other vehicles on the service drive or extend into any other public or private street.

G. Landscape Vegetation Standards

Landscape vegetation shall consist of species which shall be compatible with conditions in Southeastern Louisiana and shall meet the following standards:

1. Trees

a. Trees shall be of a minimum of ten (10) feet in height, with a minimum diameter of at least one and one half inches (1 1/2") dbh (diameter at breastheight) or measured from a point four and one half feet (4 1/2') above ground.

b. Trees shall have an average mature spread of crown of a minimum of fifteen feet (15'). Trees with a spread of less than fifteen feet (15') may be used by grouping two (2) or more trees to create a fifteen foot (15') spread.

2. Shrubs

Shrubs shall be of a minimum height of two feet (2') when planted.

3. Groundcover

a. Groundcover plants shall form a solid mat or cover over the ground within two years.

b. Sod shall be employed when grass is used as a groundcover.

c. Non-living material such as rocks, pebbles, sand, wood mulch or chips shall be placed at a minimum depth of three inches (3") and shall be used in conjunction with an appropriate landscape weed control fabric.

H. Visual Clearance

1. All landscaped areas shall provide unobstructed cross-visibility at a level between three (3) and six (6) feet in height within safety triangles formed when an access way intersects a public right-of-way or when the petitioned property abuts the intersection of two or more rights-of-way. With the exception of required grass or groundcover, landscaping shall not be located closer than three (3) feet from the

edge of any accessway pavement. To insure landscaped areas do not constitute a driving hazard, safety triangle setback requirements are as follows:

a. The areas of property on both sides of an accessway formed by the intersection of each side of the accessway and the public right-of-way line with two sides of each triangle being ten (10) feet in length from the point of intersection and the third side being a line connecting the ends of the two other sides.

b. At street intersections, the sight triangle shall be formed by measuring thirty-five feet (35') along curb lines and connecting these points.

I. Installation

All landscaping shall be installed in an appropriate manner in order to maintain the health and quality of plant material. Final building inspection shall not be released or certificate of use or occupancy shall be authorized unless all landscaping requirements are met.

J. Maintenance

It is the responsibility of the owner, tenant or their agent to maintain landscaped areas in an attractive, healthy condition and kept free from debris.

K. Existing Plant Material

Existing, healthy plant material on a site may be used as a credit toward fulfilling the landscaping requirements specified in this section.

L. Tree Survey

Prior to the clearance of any site, a tree survey shall be conducted and all buildings and vehicular use areas shall be designed so as to preserve as many trees as possible.

M. Sidewalks

1. Sidewalks shall be provided in accordance with Parish Codes.

2. Sidewalks shall be incorporated and coordinated with landscaping requirements stated herein and may be curved to add to aesthetic appeal.

N. Lighting

1. The maximum height for any light fixture is twenty-five feet (25').

2. Lighting shall be oriented inward, toward the development or structures, to minimize intrusion into surrounding property.

3. Lighting fixtures shall be incorporated within landscaped areas.

7. SIGN REGULATIONS

A. General

The following sign regulations shall apply to all signs on property within a designated CPZ, unless provisions in the underlying zoning district or otherwise stated in the Comprehensive Zoning Ordinance are more restrictive, in which case and in keeping with the purpose of the CPZ, the more restrictive sign regulations shall prevail. For the purpose of this section, "development" refers to a building(s) and/or structure(s) on a site.

B. Permitted Signs

1. Attached, Flat, Projecting & Roof Signs

Each use shall be allowed one attached flat sign, or projecting sign or roof sign subject to the following provisions:

a. Permitted Contents

Identification by letter, numeral, symbol, or design of the on-premise use, its name and/or address and the nature of the use.

b. Permitted Sign Area

1. The allowable total attached sign area shall be computed at 3 square feet per lineal foot of primary building frontage elevation area consisting of the wall on which the business or development has its main entrance; or 20% of the building frontage elevation area on which the sign is to be located, provided however that no single attached sign shall exceed 300 square feet. Illuminated signs inside of windows and within five feet of such windows shall be included in the computation of aggregate sign area and in addition shall be limited to ten percent of the total glass area of the window in which the signs are placed.

2. On corner properties, one additional sign shall be permitted on a secondary building frontage elevation area provided the total area of the sign does not exceed 50% of the allowable sign area as for single frontage properties.

3. Developments meeting the following minimum setback schedule shall be allowed a larger attached sign area.:

| MINIMUM SETBACK | MAXIMUM PERCENTAGE OF PRIMARY BUILDING ELEVATION AREA |
|---|---|
| 100 - 199 ft. | 20% |
| 200 ft. + | 25% |

c. Permitted Dimensions

No projecting sign shall extend more than five feet from the face of the building.

d. Permitted Height

No sign shall be erected above the roof ridge line of the main building.

2. Canopy and Marquee Signs

Each business on the premises shall be allowed two canopy or marquee signs in addition to other permitted attached signs with the area for each sign limited to three (3) square feet.

3. Detached Signs

Each development shall be allowed one on-premise detached sign except as noted in paragraphs 4 and 5 below, subject to the following provisions

a. Permitted Contents

The contents of a detached sign for a development or structure is limited to identification by letter, numeral, symbol and/or design of the on premise use, its name and/or address; and the name of the individual uses if the development or structure has more than one (1) use, provided that on secondary signs on corner lots and through lots such secondary sign may only identify the development or single user unless the sign faces a major street as defined by the Major Streets Plan of Jefferson Parish.

b. Permitted Sign Area

The allowable sign area shall not exceed one (1) square foot per lineal foot of property frontage (being the length of the property along the adjacent public right-of-way) or three hundred (300) square feet, whichever is less. On corner and through lots only one property frontage may be used to determine the allowable sign area.

c. Permitted Height

The height of a detached sign shall not exceed thirty (30) feet. However, the height may be increased one (1) foot for every one (1) foot of setback from the property line, not to exceed 40 feet.

d. Permitted Materials

The sign shall be constructed of metal or wood, or encased in a wood frame or other such material which complement and coordinate with the architectural style of the development

e. Design Features

Signs should be coordinated and incorporated into the required landscaped areas. For example, signs should be mounted on earth berms instead of standard support structures whenever possible.

4. Corner Lots

On corner lots where either property line exceeds 300 feet, a second sign shall be permitted with the same requirements for single frontage properties, provided that no such detached sign shall be located across from, adjacent to or within 75 feet of a residential development or district.

5. Secondary Signs on Through Lots

A second sign may be erected on the second front of a through lot provided the following additional provisions are met:

a. 1. The maximum area of the second sign is 70 square feet.

2. The maximum area of the second sign is 20 square feet if the through lot is located across from, adjacent to or within 75 feet of a residential development or district.

b. The maximum height of the second sign is 12 feet.

c. The second sign must be incorporated into a landscaping bed of at least 60 square feet.

d. The landscaping bed shall consist of shrubs, ground cover (excluding grass) and/or other suitable plant materials, and exclude any impervious surface.

e. The second sign must be set back from the property line a distance at least equal to the height of the sign.

6. Directional & Instructional Signs

Directional and instructional signs shall be limited in area to six (6) square feet, giving directions or instructions to motorists and/or pedestrians regarding the location of parking areas and access drives and other information as necessary. Directional and instructional signs shall be not more than eight (8) feet in height above the ground; may be illuminated but shall not flash, blink or fluctuate; and shall not be animated.

7. Rate & Price Signs

Developments shall be allowed to include rate and price information on a detached sign subject to the following conditions:

a. Free-standing signs displaying price and rate information are restricted to those uses which provide drive-through service as an integral element of its business activity. Only one such sign shall be permitted and shall be limited to four (4) square feet in area; six (6) feet in height; and may be illuminated but shall not flash, blink or fluctuate.

b. All other price and rate information may be included on the detached sign structure and shall be limited to thirty (30) percent of the total permitted sign area.

c. Menu boards servicing drive-up restaurants shall be permitted provided that:

1. Said menu boards are not located within the first twenty feet of the front of the development; and

2. Sound systems associated with said menu boards are oriented in such a way so that resulting noise does not intrude at a decibel level above the normal speech into surrounding residential development and shall comply with all other applicable noise ordinances of Jefferson Parish.

8. Portable Signs

Portable signs are prohibited in the CPZ.

9. Temporary signs shall be governed by general regulations set in Section XVIII-A.

10. Nonconforming Signs

a. All signs not in conformance with the provisions of this overlay zone and all general advertising signs erected prior to the enactment of this overlay zone shall be subject to the provisions stated in Paragraphs 1,2 and 3 below. Such signs may continue in operation and be maintained after the placement or effective date of the Commercial Parkway Overlay Zone, CPZ, provided the height and area of the sign is not increased. The burden of establishing such signs as legally nonconforming rests entirely with the person claiming such status for a sign and subject to the following:

1. Whenever a non-conforming sign is replaced it shall comply with the provisions of this Section.

2. Signs relocated on the same or different premises within the CPZ shall comply with the provisions of this Section.

3. All signs on public rights-of-way, whether State or Parish, shall be removed at owner's expense within three years from the effective date of this ordinance and the provisions of this ordinance shall

repeal any and all permits and/or Council resolutions previously issued for such signs on public right of ways.

8. SITE PLANS

A. Procedure

Prior to the issuance of a building permit, site plans for the proposal shall be submitted to the Planning Department as specified in Subsection 10 for review and determination if the proposal meets Commercial Parkway Overlay requirements. If CPZ requirements are not fully met, site plan review before the Planning Advisory Board and Parish Council is required.

B. Site Plan Requirements

Site plans shall contain the following information:

1. Letter of Transmittal addressed to the Director of the Department of Inspection and Code Enforcement briefly stating plans for property and containing the following:

   a. Name, Address and Phone Number of the property owner.

   b. Name, Address and Phone Number of the designated agent or representative of the property owner.

2. Complete site plans indicating but not limited to the following:

   a. Certified survey with

      1. North Arrow

      2. Bounding Streets

      3. Existing and proposed public servitudes and rights-of-way

      4. Lot and Square Number, Name of Subdivision

   b. Proposed and Existing Structure(s)

      1. Square Footage of Each Structure

      2. Square Footage of Development

      3. Elevations

   c. Parking Layout

      1. Location of all Parking Spaces

2. Number of Required Parking Spaces

3. Number of Proposed Parking Spaces

4. Type of Parking

d. Landscaping Plan

1. Dimensions of Landscaped Areas (Length and Width)

2. Landscaping Legend - Size, Type, Location of Tree, Shrub, Grasscover

3. Sidewalks

A. Location

B. Dimensions

4. Maintenance Plan

e. Light Fixtures

1. Location

2. Height

3. Intensity

4. Number

5. Type

f. Service Area Buffers/Fencing

1. Location

2. Height and Length

3. Materials

g. Signs

1. Attached, Flat and Projecting

A. Location on Building

B. Dimensions

1. Height and Width

2. Total Square Footage

2. Detached

A. Location on Site

B. Dimensions

1. Sign Face(s)

a. Height, Width, Depth

b. Square Footage

3. Other Signs - Directional/ Instructional, Canopy and Marquee

A. Location

B. Dimensions

1. Height, Width

2. Square Footage

3. Total Square Footage

a. Attached Signs

b. Detached Signs

c. Other

d. Grand Total

9. COMPLIANCE WITH COMMERCIAL PARKWAY OVERLAY ZONE (CPZ)

A. Existing Development

1. Conditions for Compliance

Development and structures existing prior to adoption of the CPZ shall, in accordance with Subsections A(2) and (3) hereof, comply with CPZ requirements when any of the following conditions are met:

a. Change of Permitted Use

Structures utilized by a single business which are not a part of a development with multiple land uses such as a shopping center, and which structures were in existence prior to the adoption of the CPZ, shall comply with the CPZ requirements upon change of permitted use that would require an increase in the number of parking and loading spaces needed to service the structure.

b. Additions

Any additions to developments or structures, including construction of parking lots, that add fifty percent or more to the size of the original development, as defined in Subsection 7.A. above, shall comply with the CPZ requirements.

c. Renovations

Developments and structures existing at the time of CPZ designation shall comply with CPZ requirements when (1) renovation of any structure involves a change in the user and use of the area involved in the renovation and (2) renovation expenses in any 12 month period exceed 50% of the fair market value of the existing improvements in the development as shown by the most recent tax assessment, which tax assessment information shall be provided by the applicant in affidavit form. A change in the entity that is the user shall not be considered a change of user when there is no material change between the owners of the prior and new user entities.

2. Space Limitations of Existing Structures

a. No existing developments or structures present within the CPZ shall be required to delete any improvements or the required number of legal off-street parking spaces to comply with the requirements of this zone.

b. All existing developments and structures when required to comply with CPZ shall comply with requirements set in the zone to the maximum extent possible and subject to space limitations of existing structures and improvements in accordance with the general intent of the landscaping and buffering provisions set in the CPZ.

3. Development for Structures with Multiple Land Uses and Occupants

When any portion of a development or structure with multiple land uses such as a shopping center, meets any of the conditions delineated in Subsection (A) (1) (b) or (c), a comprehensive plan shall be required to bring the site into compliance with the CPZ requirements. The site shall be required to come into compliance with the CPZ requirements in proportion to the cost of the renovation or additions in gross floor area to the existing development. The plan shall show the improvement that could be made to bring the developer into compliance with CPZ considering space

limitations, the cost of each of those improvements and shall list the improvements to be made. The cost of the improvements to be made shall equal or exceed the cost of the renovation or addition to the existing development.

B. New Development

New developments within the CPZ shall fully comply with all regulations specified in this Section. Site plan review with public hearings before the Parish Council and/or Planning Advisory Board in accordance with Subsection 10, Site Plan Review is required for developments not meeting CPZ requirements.

C. Off Site Improvements

The required off-site sidewalks, driveways, curbs cuts and landscaping must be shown on all applications for permits and final building inspection shall not be released until such off-site improvements are installed or a contract and performance bond is provided for the value of such off-site improvements. If the final building inspection is released pursuant to a contract and performance bond such off-site improvements shall be installed within sixty (60) days subject to an additional sixty (60) day administrative extension.

10. SITE PLAN REVIEW

A. Required Site Plan Review

Site plan review, when required, shall be in the form of public hearings before the Planning Advisory Board and the Parish Council.

B. Site Plan Review Criteria

Requests for variation in the CPZ requirements may be granted by the Jefferson Parish Council through the site plan review process, upon recommendation by the Planning Department and Planning Advisory Board, provided the following minimum criteria are met:

1. The proposal complies with the CPZ requirements to the maximum extent possible and taking into account space limitations of existing structures;

2. The proposal enhances the general quality of commercial and office corridors by providing buffers to neighboring residences and other commercial uses; increases public safety by guiding traffic to minimize the impact of development and structures on drainage; and coordinates with greenspace and signage in the corridor.

3. The proposal does not adversely effect the harmony or compatibility of surrounding land uses; and

4. That special conditions and circumstances exist peculiar to the land, structures or buildings which are not applicable to other land, structures or buildings in the same zone.

C. Site Plan Review Procedures

1. Pre-Application Conference

Prior to the submission of an application for site plan review in a CPZ, a pre-application conference with a designated representative of the Planning Department is required. The purpose of the pre-application conference is to thoroughly discuss the proposal and to bring the petition in conformity with regulations specified in the CPZ. The Planning Department shall notify the Planning Advisory Board of the time and place of such pre-application conference.

2. Application

An application for site plan review in a CPZ shall be filed with the Planning Department and shall contain the following information:

a. Interest and Ownership

The applicant's name, address and interest in the application, and the name, address and interest of every person, firm or corporation represented by the applicant in the application; the concurrence of the owner or owners of the entire land is included in the proposed plan and all encumbrances of such land; and sufficient evidence to establish that the applicants are all the owners and encumbrances of the designated area, and have the ability to do so.

b. Development Plans

Plans showing the land area included within the proposed plan with the boundaries, dimensions and present zoning classification of the area; and adjoining properties and the present zoning classification thereof; all public and private easements and rights-of-way, existing and proposed within or bounding the designated area and the adjoining properties; the location of buildings and the use of the land on adjoining properties; curb cuts and driveways; off-street parking areas; off-street loading areas; sidewalks and pedestrian amenities; open areas to be set aside for special purposes; the location and height of proposed walls, fences, buffers, and landscaping; types of paving or other surfacing to be used in various areas; type, height, orientation and location of all lighting fixtures; type, height, location and method of illumination of all signs; any such other information as may be necessary to describe completely the proposed development and structures and as stated in subsection 8, Site Plans, of this section.

c. Ordinance and Legal Attachments

An ordinance and all other legal attachments relative to the CPZ is required at the time of application in the format specified by the Jefferson Parish Clerk of Council.

d. Fees

Before any action shall be taken regarding an application for a CPZ site plan review as forth in this section, the applicant shall deposit with the Planning Department a fee in the sum of one hundred fifty dollars ($150.00) to supplement the cost of processing the application.

e. Administrative Examination

1. When full site plan review is required with public hearings before the Planning Advisory Board and the Council, and upon receipt of a complete application, with all information properly supplied as specified above and in Subsection 8, the Planning Department shall coordinate a review of the site plan with appropriate Parish departments and agencies to determine conformance to Parish, State and Federal codes.

2. Following departmental review, the Planning Department shall process the request in accordance with Section XXVIII, Changes and Amendments, for general procedures not specified in subsection 10 of the CPZ by the next available advertisement deadline.

3. Registration of CPZ Site Plan

Upon approval of a CPZ Site Plan, a copy of such shall be recorded with the Clerk of Court through the office of the Clerk of Council. An original of same shall be furnished to the Planning Department with a copy also furnished to the Department of Inspection & Code Enforcement which shall thereafter be binding upon the applicants, their heirs, successors, and assigns; shall limit the control the issuance and validity of permits and certificates; and shall restrict and limit the use and operation of all land and structures within the area designated on the CPZ Site Plan and approval thereof.

4. Minor Changes in Approved CPZ Site Plans

a. Minor changes needed to facilitate construction and site improvements are permitted, if such minor changes will not change the character of the approved development or structures, nor increase the density, gross floor area, intensity of use, or ground coverage. Further no increase of total building site area, in spaces between buildings, the ratio of off-street parking and off-street loading area to gross floor area, or gross floor area shall be considered. No change shall be deemed minor to the approved CPZ Site Plan that alters the approved permitted uses.

b. The Director of Planning shall review and determine what constitutes a minor or major change for an approved CPZ Site Plan and be responsible for making minor changes on the site plan, if the request is approved. Appeals of said decision by the Planning Director shall be forwarded to the

Planning Advisory Board for review, where a majority vote of the members shall be required to override the decision of the Planning Director concerning said minor change. Otherwise, an amendment to the CPZ Site Plan shall be required, in accordance with procedures delineated in Subsection 10C, of this section.

5. Amendment or Withdrawal of CPZ Site Plan

Pursuant to the same procedure and subject to the same limitations and requirements by which the CPZ Site Plan was approved and registered, any CPZ Site Plan may be amended or withdrawn, either partially or completely, if all land and structures remaining under such CPZ Site Plan comply with all regulations established by the zoning ordinance and unrelated to the CPZ.

6. Phased Development

a. Developments within an approved CPZ Site Plan may be developed in phases, provided that the more restrictive land uses and the necessary off-site improvements are completed first and time frame for phases is submitted at the time of the application.

b. Approval of the CPZ Site Plan is voided if the development or structures is not initiated within one (1) year, and completed within two (2) years. Additional time may be granted by the Jefferson Parish Council for a period of one year, upon recommendation by the Planning Advisory Board and Planning Department, if completion of the approved site plan is assured. In no case shall any development or structures within a CPZ exceed a four (4) year period.

11. Regulations, requirements or standards set in the CPZ are not subject to appeal to the Zoning Appeals Board.

12. TITLE RESTRICTIONS

Title restrictions shall be included in the CPZ ordinance and shall be recorded with the Clerk of Court in favor of the Parish of Jefferson restricting the use of the property to that approved by the Jefferson Parish Council in accordance with the provisions of this section.

13. Development within a CPZ shall meet all federal, state and local fire, safety and building codes, and all other applicable codes.

# APPENDIX B

# SECTION XIII F MIXED USE CORRIDOR DISTRICT

1. PURPOSE

The purpose of the Mixed Use Corridor District (MUCD) is to provide a superior means for developing mixed land uses along major transportation corridors as identified on the Major Street Plan of Jefferson Parish, through landscape and buffer requirements, general design standards and sign regulations. The Mixed Use Corridor District offers flexibility, allowing selected permitted uses to be integrated into a unified plan.

2. DISTRICT COMPOSITION

A. Permitted Uses

1. Basic Permitted Uses

Basic permitted uses allowed in the Mixed Use Corridor District without site plan review shall be:

a. Single Family Residential Dwelling Units, exclusive of mobile homes and manufactured housing units.

b. Two Family Residential Dwelling Units

c. Home Occupations

d. Accessory Uses and Structures

2. Mixed Permitted Uses

a. Permitted uses allowed in the following zoning districts may be combined to create unified development within the Mixed Use Development District, provided that all of the regulations of the Mixed Use Corridor District and all other Parish codes are met:

1. Three and Four Family Residential District (RR-3)

2. Multiple Family Residential District (R-3)

3. General Office District (GO-1)

4. General Office District (GO-2)

5. Neighborhood Commercial District (C-1)

6. General Commercial District (C-2)

7. Medical Services District (H-1)

8. Medical Services District (H-2)

9. Office Warehouse District (OW-l)

b. Site plan review in various levels shall be required for some developments with mixed permitted uses, in accordance with Subsection 2.C, Site Plan Review.

B. Other Elements Of The Mixed Use Corridor District

Other elements of the Mixed Use Corridor District include area regulations, parking requirements, landscape, buffer and general design standards, and sign regulations, as specified in Subsections 4, 5, 6, 7, and 8, respectively, and apply to development with any of the mixed permitted uses or combination thereof listed in Subsection 2.A.2.

C. Site Plan Review

1. Development in the Mixed Use Corridor District that contains any of the uses listed in Subsection 2(A2), Mixed Permitted Uses, shall require one of two levels of site plan review:

a. Level I Site Plan Review shall apply to developments which fully meet the Mixed Corridor District regulations. Once a Level I site plan review is determined, the development proposal shall be to required to submit to building permit process through the Department of Inspection and Code Enforcement.

b. Level 2 Site Plan Review shall apply to developments which do not fully meet the Mixed Use Corridor District regulations and request a variance. Such development shall be required to undergo site plan review through the Planning Department via development review procedures delineated in Subsection 9. Public hearings on the development proposal shall be held by the Planning Advisory Board and the Jefferson Parish Council. Such variations in the Mixed Use Corridor District regulations may be granted by the Jefferson Parish Council, upon recommendation by the Planning Department and the Planning Advisory Board, provided the following criteria are met:

1. The granting of the variation is not inconsistent with the general provisions and intent of the Mixed Use Corridor District.

2. Harmony and compatibility with adjacent land uses are not adversely affected.

3. Special conditions and circumstances exist peculiar to land, structures or buildings which are not applicable to other land structures or buildings in the same district and which a site related hardship can be demonstrated.

2. The two levels of site plan review delineated herein shall apply to all new development and existing development and existing development with change of use, major additions, or renovations meeting criteria in Subsection 9B.

3. Development review procedures for each of the levels of site plan review are specified in Subsection 9, Development Review Procedures in the Mixed Use Corridor District.

3. HEIGHT REGULATIONS

A. The maximum height for any building or structure in the Mixed Use Corridor District is sixty-five feet (65').

B. Height Requirements When Abutting Residential Development

1. Land Use compatibility to surrounding land uses shall be encouraged through transitions in building heights on any side of a development abutting single family and two family residential zoning districts to match the maximum thirty-five (35') height required for such districts. The building setback for such transitional structures shall be one foot for each additional foot of height over thirty-five (35'), up to a maximum of sixty-five feet (65').

2. Buildings or structures abutting single or two family residential developments over thirty-five feet (35'), which do not include transitions in height to match the maximum permitted height for single and two family residential zoning districts, shall be required to have the appropriate front side or rear yard setback increased a minimum of two (2) feet for each additional foot of height that the building exceeds thirty-five feet, up to a maximum of sixty-five feet (65'). These setbacks are in addition to the area requirements set in the Mixed Use Corridor District.

4. AREA REGULATIONS

A. Setbacks

1. Front Yard

a. All structures shall be a minimum of twenty feet (20') from the street right-of-way.

b. In addition to landscape requirements outlined in Subsection 6, said setback shall be landscaped with grass, trees and shrubs, except for approved drive-ways. No parking or paving shall be allowed in the required front yard.

c. On through lots the required front yard shall be provided on both streets.

2. Side Yard

a. All buildings shall be a minimum of ten (10) feet from the side property line. On the side of the lot abutting a residential district, or on the side of a non-residential structure adjacent to a residential structure, there shall be a side yard having a minimum width of fifteen (15) feet.

b. On corner lots the side yard on the side of the lot abutting the side street shall not be less than twenty feet (20') except an accessory building which is not part of the main building may locate as near as ten feet (10') from the side of the lot abutting the side street provided the lot in the rear of the corner lot does not front the side street.

c. Substandard lots of record established prior to the adoption of this ordinance as amended shall provide a side yard as per the following schedule when abutting a non-residential use or district:

Lot widths less than fifty (50) feet: no side yard is required.

Lot widths fifty to fifty-nine (50 to 59) feet: no side yard is required for the building; side yard when provided adjacent to building: a minimum of five (5) feet; one side yard having a minimum width of five (5) feet is required in the vehicular use area.

Lot widths sixty to seventy-four (60 to 74) feet: one side yard having a minimum width of ten (10) feet is required for the building; two side yards having a minimum width of five (5) feet each are required for the vehicular use area.

Lot widths of seventy-five (75) feet plus: two side yards having a minimum width of ten (10) feet each are required for the building; two side yards having a minimum width of five (5) feet each are required for the vehicular use area.

3. Rear Yard

a. On the rear of a lot abutting a residential district or on the rear of a non-residential structure adjacent to a residential structure there shall be a rear yard having a minimum depth of twenty feet (20'). Where a rear yard, though not required, is provided such rear yard shall not be less than five feet (5').

B. Lot Area

1. For residential developments in the Mixed Use Corridor District, minimum lot area per family regulations are as follows:

a. Lots occupied by single family dwellings shall contain an area of not less than four thousand (4,000) square feet.

b. Lots occupied by two family dwellings shall contain an area of not less than twenty-five hundred (2,500) square feet per family.

c. Lots occupied by three family dwellings shall contain an area of not less than two thousand (2,000) square feet per family.

d. Lots occupied by four family dwellings shall contain an area of not less than fifteen hundred (1,500) square feet per family.

e. Lots occupied by five family dwellings shall contain an area of not less that twelve hundred (1,200) square feet per family.

f. Lots occupied by multiple family dwellings shall contain an area as follows:

| | |
|---|---|
| 6 thru 12 apartments: | 1,000 sq. ft. per family |
| 13 apartments: | 12,300 sq. ft. total lot area |
| 14 thru 20 apartments: | 900 sq.ft. per family |
| 21 and 22 apartments: | 18,200 sq.ft. total lot area |
| 23 thru 39 apartments: | 800 sq.ft. per family |
| 40 thru 43 apartments: | 31,500 sq.ft. total lot area |
| 44 or more apartments: | 700 sq.ft. per family |

This regulation shall not apply to dormitories, fraternities, sororities, or to the units of an apartment hotel not having culinary facilities.

C. Site Area Requirements

1. Property shall be eligible for reclassification to a Mixed Use Corridor District by individual petition if a minimum site area contains ten thousand (10,000) square feet or greater and has a minimum width of seventy-five (75) feet and a minimum dpth of one hundred (100) feet.

2. Property zoned Single Family Residential District (R-1) or Two Family Residential District (R-2) shall not be permitted to be reclassified to a Mixed Use Corridor District unless the following conditions are met:

a. The subject property is located on a major transportation corridor as defined in the Major Street Plan;

b. The subject property is located in an area of mixed or largely commercial development;

c. The subject property is not located within a residential neighborhood and completely surrounded by single family and two family zoning districts or development.

5. PARKING REQUIREMENTS

A. Parking space requirements are listed in Section XVIII, Off-Street Parking and Loading Regulations in the Zoning Ordinance.

B. Additionally, said parking spaces shall be oriented so that no vehicle is required to back directly into a street right-of-way.

6. LANDSCAPE AND BUFFER STANDARDS

A. Definitions

1. Earth Berm: Mounds or walls of earth molded into landforms within a landscaped area and covered with plant material or durable mulch so that bare soil is not visible. Earth berms are used for screening and buffering and should be constructed so as to prevent soil erosion.

2. Encroachment: Any protrusion of a vehicle outside of a parking space or access way into a landscaped area.

3. Landscaping: Any combination of grass, ground covers, shrubs, vines, hedges, and trees; and nonliving durable material commonly used in landscaping such as but not limited to rocks, pebbles, sand, walls, or fences but excluding paving.

4. Shrubs: Self-supporting, woody evergreen species normally grown in Southeastern Louisiana.

5. Trees: Self-supporting, woody plants of species normally growing to an overall minimum height of fifteen (15) feet in Southeastern Louisiana.

6. Vehicular Use Area: Land upon which vehicles traverse and all areas used for the display or parking of any and all types of vehicles, boats or heavy construction equipment, whether such boats or equipment are self-propelled or not, and land upon which vehicles traverse the property as a function of the primary use.

7. Vines: Plants which normally require support to reach mature form.

B. General Landscape and Buffer Requirements

Landscaping requirements in this section are minimum standards and applicable to areas used for the parking of four or more vehicles to traverse back and forth to parking spaces, service bays, and loading/unloading areas. The only exceptions to these landscaping

requirements are parking areas serving single and two-family residential developments. The landscaping requirements shall provide effective buffering of all vehicular use areas, including service bays, from residential development and from street view and shall serve to guide traffic. Developers shall be encouraged to incorporate waterscapes, fountains, clocktowers and other architectural features with landscaping to add to aesthetics and visual attraction.

1. Interior of Lot

   a. Interior lot landscaping shall be provided by landscaped islands or medians within the vehicular area and shall be used to guide traffic and separate pedestrian walkways from vehicular traffic.

      1. One such landscaped island or median shall be placed for every twelve (12) parking spaces and shall be a minimum of sixty (60) square feet in area. Landscaped islands may be grouped or combined to meet interior landscape requirements provided the total square footage of any single grouping does not exceed one hundred-twenty (120) square feet.

      2. The landscaped island or median shall consist of a minimum of one (1) tree and surfaced with shrubs and ground cover or grass, and excluding paving.

2. Perimeter of Lot Adjacent to Abutting Property

   a. On the perimeter(s) of the lot adjacent to abutting residential property, a continuous, unbroken barrier is required for the purpose of buffering service bays, loading and unloading areas, and off-street parking or other vehicular use areas exposed to the abutting property. The barrier shall be located between the common lot line and the service bay, loading or unloading area, off-street parking or other vehicular use area, the MUCD physical structure and the abutting property. The barrier shall be a minimum of seven (7) feet in height consisting of an opaque material such as a masonry or wood fence, an earth berm, an opaque hedge or any combination thereof. Additionally, a buffer strip consisting of a green area with a ten (10) foot minimum depth shall be provided to mitigate the effect of the Mixed Use Corridor District development on the abutting residential property. Additional buffer strip area may be required for developments greater than twenty-five thousand (25,000) square feet of building area. On the perimeter(s) of a lot adjacent to abutting non-residential property or use, a continuous unbroken buffer strip having a minimum width of five (5) feet shall be provided.

   b. At a minimum, one tree shall be provided every thirty-five (35) linear feet. Such trees shall be located or grouped within the required buffer strip between the common lot line and the service bay, loading and unloading area, off-street parking or other vehicular use area, the MUCD physical structure and the abutting property. Said buffer strip shall be landscaped

with grass, shrubs, ground cover or other landscape material excluding paving, in addition to the required tree.

c. The provision of this subsection shall not apply in the following situations:

1. When the proposed perimeter abuts an existing wall or durable landscape barrier on an abutting property, said existing barrier may be used to satisfy the landscape barrier requirement of this subsection, provided that said existing barrier meets all applicable standards set in this ordinance. However, the buffer strip shall still be required.

2. Lots existing prior to the adoption of this ordinance, as amended, having sub-standard lot width shall be required to landscape a minimum of ten (10) percent of the area of the lot.

3. Perimeter of Lot Adjacent to Public Rights-of-Way:

a. On the perimeter(s) of the lot adjacent to public rights-of-way, a strip of land of at least five (5) feet in depth located between the right-of-way and the off-street parking or other vehicular use area shall be landscaped to include one tree for each fifty (50) feet or fraction thereof. Such trees shall be located between the abutting right-of-way and the off-street parking or other vehicular use area and shall be planted singularly or grouped in a planting area of at least twenty-five (25) square feet. In addition, a hedge, wall, earth berm, or other durable landscape barrier a minimum of two (2) feet in height shall be placed along the perimeter of such landscape strip. If said barrier consists of nonliving material, one vine or shrub shall be planted every ten (10) feet and abutting the barrier. The remainder of the required landscape strip shall be planted with grass, ground cover or other landscape material and exclusive of paving.

b. Variation in the size of front yard landscaping along the perimeter of rights-of-way shall be allowed provided the front bed maintains a minimum depth of ten feet and extends greater in some areas, so that the average is twenty (20) feet.

4. Development Within the Mixed Use Corridor District:

Different land uses within the Mixed Use Corridor District shall be landscaped and buffered appropriately and in general compliance with the landscape and buffer standards set forth in this section.

5. Visual Clearance

a. All landscaped areas shall provide unobstructed cross-visibility at a level between three (3) and six (6) feet in height within safety triangles formed when an accessway intersects a public right-of-way or when the petitioned property abuts the intersection of two or more rights-of-way. With the

exception of required grass or groundcover, landscaping shall not be located closer than three (3) feet from the edge of any accessway pavement. To insure landscaped areas do not constitute a driving hazard, safety triangle setback requirements are as follows:

1. The areas of property on both sides of an accessway formed by the intersection of each side of the accessway and the public right-of-way line with two sides on each triangle being ten (10) feet in length from the point of intersection and the third side being a line connecting the ends of the two other sides.

2. At street intersections, the sight triangle shall be formed by measuring thirty-five (35) feet along curb lines and connecting these points.

3. Fences shall be reduced to a maximum of three feet (3') in height within visual clearance triangles and required front yards, and for the purposes of this ordinance shall not be considered structures.

6. Installation:

All landscaping shall be installed in an appropriate manner in order to maintain the health and quality of plant material. No certificate of use or occupancy shall be authorized unless all landscaping requirements are met.

7. Protection of Landscaped Areas:

The placement of barrier curbs or wheel stops is required to protect all landscaped areas from vehicular damage.

8. Maintenance

It is the responsibility of the owner, tenant or their agent to provide the Parish with a maintenance plan at the time of the application to ensure landscaped areas remain in an attractive, healthy condition and kept free from debris.

9. Existing Plant Material

Existing, healthy plant material on a site may be used as a credit toward fulfilling the landscaping requirements specified in this section.

10. Tree Survey and Preservation

a. The MUCD recognizes the beneficial qualities of preserving trees and greenspace including but not limited to: adding aesthetic appeal and increasing property values; guiding and separating vehicular and pedestrian traffic, thereby increasing safety; tempering climatic conditions; and absorbing rainwater, thereby reducing the impact of development on the

drainage infrastructure. The purpose of these provisions is to encourage tree preservation to the maximum extent feasible for MUCD developments.

1. Significant Trees

A. Significant trees defined as Oaks or Magnolias twelve inches (12") in diameter and other trees twenty-four inches (24") in diameter as measured at breast height (dbh), or as measured from a point 4 1/2 feet above grade, shall be preserved within the Mixed Use Corridor District development, to the maximum extent possible, using accepted tree protection techniques.

B. Removal of significant trees weakened by disease, age, storm, fire or other injury shall be permitted.

2. Building and vehicular use areas shall be designed to preserve as many trees as possible for incorporation into the overall development plan. Prior to the clearance of any site, a significant tree survey shall be conducted and all buildings and vehicular use areas shall be designed so as to preserve as many trees as possible, with special emphasis given to significant trees.

3. The preservation of drip lines of existing trees maintained in green areas may be credited towards the required interior or perimeter landscaping.

11. Landscape Vegetation Standards

Landscape vegetation shall consist of species compatible with conditions in Southeastern Louisiana and shall meet the following standards:

a. Trees

1. Trees shall be of a minimum ten (10) feet in height, with a minimum diameter of at least one and one half (1 1/2) inches diameter at breast height (dbh) or as measured from a point four and one half (4 1/2) feet above ground.

2. Trees shall have an average mature spread of crown a minimum of fifteen (15) feet. Trees with a spread of less than fifteen (15) feet may be used by grouping two (2) or more trees to create a fifteen (15) foot spread.

b. Shrubs

Shrubs shall be a minimum height of two (2) feet when planted.

c. Groundcover

1. Groundcover plants shall form a solid mat or cover over the ground within two years.

2. Sod shall be employed when grass is used as a groundcover.

3. Non-living material such as rocks, pebbles, sand, wood mulch or chips shall be placed at a minimum depth of three (3) inches and shall be used in conjunction with an appropriate landscape weed control fabric.

7. GENERAL DESIGN STANDARDS

A. Public Service Infrastructure

Adequate facilities shall be provided to meet the needs of the proposed mixed use development with respect to: drainage of surface waters, including storm sewers, gutters, etc.; sanitary sewerage; flood protection, levees, when appropriate; underground utilities; requirements set in the Parish Subdivision Regulations; and any other provisions for public services necessary as determined by the Parish.

B. Transportation Networks

1. Adequate ingress, egress and internal circulation shall be provided to accommodate vehicular and pedestrian traffic, including walks, driveways, service bays and driveways, and off-street loading areas.

2. All areas subject to vehicular traffic, including accessways, service bays and drives, loading and unloading areas shall be paved with hard, all-weather material.

3. Pedestrian and vehicular traffic shall be separated with landscaped space.

4. The linking and coordination of parking areas between developments in the Mixed Use Corridor District shall be encouraged to reduce the number of turns onto and off of surrounding streets and reduce potential traffic conflicts.

5. The sharing and coordination of access ways such as driveways and service areas between developments in the Mixed Use Corridor District shall be encouraged to control the number of curb cuts and reduce potential traffic conflicts in the transportation network of the site and enhance the site as it relates to surrounding development.

C. Service Bays/Drives

1. Service bays, service drive, trash receptacle and dumpster areas shall not be oriented on the same side of the Mixed Use Corridor District development as abutting residential property. The purpose of which is to mitigate the negative effect of such service areas, such as noise, odor, refuse, and visual pollution from residential development. In such cases where this is not possible, an additional five

(5) foot landscaping and buffer strip shall be required in addition to that required in Subsection 6.B.2, Perimeter of Lot Adjacent to Abutting Property.

2. Service bays and drives and trash receptacle and dumpster areas shall be oriented in such a way that in the process of loading and unloading, no vehicle will block the passage of other vehicles on the service drive or extend into any other public or private street.

3. All service bays, loading and unloading areas, trash receptacles and dumpster areas must be screened on all sides by a fence with a minimum height of seven (7) feet and consisting of wood, brick or masonry.

D. Curbs and Curb Cuts

1. All curb cuts on street frontage shall be vertical curbs. No roll over curbs shall be permitted in the Mixed Use Corridor District. No curb cut shall be greater than twenty-five (25) feet at the property line and thirty-five (35) feet at the curb line and/or in accordance with the established Parish standards.

2. No curb cuts for freight lanes shall be greater than thirty-five (35) feet at the property line and forty-five (45) feet at the curb line.

3. The number of curb cuts for any particular development shall be minimized to the greatest extent possible to provide for controlled ingress and egress within the Mixed Use Corridor District.

E. Lighting

The maximum height for any light fixture is forty (40) feet, except on the side or sides of a development abutting a residential use, in which case the maximum height of twenty-five (25) feet shall be allowed. All light structures shall be shaded or hooded and orientated inward so as to prevent intrusion into surrounding areas.

F. Play Area

In multiple family residential developments, safely located play areas shall be provided for small children as required.

G. Architectural Treatment of Metal Buildings

Any building consisting of a metal exterior shall be designed and constructed such that the front building face, the side building face(s) on corner lots with street exposure, and at least five feet of the adjoining side walls are finished with wood, brick, stucco, concrete blocks with architectural treatment, glass or other similar materials.

8. SIGN REGULATIONS

A. General

The following sign regulations supersede those of and take precedence over regulations specified in Section XVIII-A of the Comprehensive Zoning Ordinance. However, for regulations on signs not addressed in this subsection of the Mixed Use Corridor District, Section XVIII-A, General Sign Regulations, shall apply. For the purpose of this section, "development" refers to a site which is a lot or lots considered as a unit for development purposes. Sign regulations are designed such that all signs in the Mixed Use Corridor District shall be harmonious and in proportion to the development and structures served, particularly as far as height and size of the building(s). The following signs shall be permitted in the Mixed Use Corridor District:

B. Permitted Signs

1. Attached Signs

Each use shall be allowed either one attached flat sign or one projecting sign subject to the following provisions:

a. Permitted Contents

Identification of uses can be by letter, numeral, symbol, or design of the use, its name and/or address and the nature of the use.

b. Permitted Sign Area

1. The allowable sign area shall be computed at one square foot per linear foot of building width or individual tenant space width along the wall on which the business has its main entrance. In no case shall the area for any flat or projecting sign be greater than one hundred (100) square feet. Illuminated signs inside of windows and within five feet of such windows shall be included in the computation of aggregate sign area and in addition shall be limited to ten percent (10%) of the total glass area of the window in which the signs are placed. Neon tubing outlining a show window, shall be included in the sign area and measured by multiplying the length of the tubing by six inches.

2. Larger developments with a gross floor area of twenty-five thousand (25,000) square feet or more, meeting the following minimum setback schedule shall be allowed a larger attached sign area:

LARGE DEVELOPMENT ATTACHED SIGN AREA SCHEDULE

| MINIMUM AREA | BUILDING MINIMUM SETBACK | MINIMUM ATTACHED SIGN AREA |
|---|---|---|
| 25,000 Sq. Ft | 200 - 299' | 150 Sq. Ft. |
| 25,000 Sq. Ft | 300 - 399' | 200 Sq. Ft. |
| 25,000 Sq. Ft. | 400' + | 300 Sq. Ft. |

c. Signs on Lots with Multiple Frontage

One additional attached sign located on a secondary building face shall be allowed on property with more than one building frontage provided the following conditions are met:

1. That the property is located at the intersection of a major street as defined by the Major Streets Plan and excluding streets serving adjacent residential property, to protect such development from the intrusion of additional signage;

2. The total attached sign area for the project is no more than one hundred fifty percent (150%) of that allowed for the attached sign on the primary building face, as set in Subsection 8.B.1;

3. The sign area for any attached sign taken independently does not exceed the square footage allowed for attached sign located on the primary building face as set in Subsection 8.B.1;

4. A corresponding amount of landscaping in identical square footage to the additional attached sign area is provided on that side of the property on which the additional attached sign is located, in addition to the basic landscaping requirements delineated in Subsection 6, Landscape and Buffer Requirements.

d. Permitted Dimensions

In every case the height of any flat or projecting sign measured from the bottom to the top shall be no greater than one-half the width from one side to the other. No projecting sign shall extend more than five (5) feet from the face of the building.

e. Permitted Height

No sign shall be erected above the parapet level of the main building.

f. Permitted Illumination

Sign may be illuminated but shall not flash, blink or fluctuate.

g. Animation

No sign shall be animated or change physical position by any movement or rotation.

2. Canopy and Marquee Signs

Each business on the premises shall be allowed two canopy or marquee signs with the area for each sign limited to three (3) square feet.

3. Detached Signs

Each development shall be allowed one on premise detached sign except as noted in paragraphs "d" below, subject to the following provisions:

a. General Design Criteria for Detached Signs

Detached sign regulations for the Mixed Use Corridor District shall be intended to increase visibility for individual projects and developments in the corridor in general by minimizing the size, height and number of detached signs and reducing competition among signs in the corridor. Low "eye level" monument type signs mounted on earth berms shall be encouraged and preferred over signs mounted on standard poles. Identification of particular projects may be emphasized by incorporating the detached sign within required landscaping and with unique, creative architectural features including but not limited to clock towers and waterscapes, such as water fountains and waterfalls.

b. Permitted Contents

The contents of a detached sign for a development containing a single use is limited to identification by letter, numeral, symbol or design of the use, its name and/or address unless otherwise noted in Subsection 8.B.4, Rate Signs. The contents of a detached sign for a development may identify individual tenants.

c. Permitted Sign Area

The allowable sign area shall be computed at one (1) square foot per linear foot of street frontage (being the width of the lot or development site along the adjacent public right-of-way) up to 200 square feet. Multi-tenant

developments may add an additional twenty (20) square feet of detached signage per tenant up to a maximum of 300 square feet.

d. Secondary Signs on Through Lots

A second sign may be erected on the second front of a through lot provided the following additional provisions are met:

1. The maximum area of the second sign is seventy (70) square feet.

2. The maximum area of the second sign is twenty (20) square feet if the through lot is located across from, adjacent to or within seventy-five (75) feet of a residential development or district.

3. The second sign must be incorporated into a landscaping bed of at least sixty (60) square feet.

4. The landscaping bed shall consist of shrubs, ground cover (excluding grass) and/or other suitable plant materials, and exclude any impervious surface.

e. Permitted Height

1. Standard Height

The height of a detached sign shall be a maximum of twenty feet (20'), with a minimum ten foot (10') setback from the property line.

2. Conditional Additional Height

Additional height shall be permitted for a detached sign up to a maximum of thirty feet (30') provided an additional one foot (1') setback for every foot of height over twenty feet (20') is provided. The sign shall be located within a landscaped area of twenty-five (25) square feet or more.

3. Monument Type Detached Sign

If a monument type detached sign is employed, a twenty-five percent (25%) increase in the permitted attached sign area shall be allowed. For the purpose of this ordinance, a monument sign shall be limited to six feet (6') in height and not more than sixty (60) square feet and incorporated within a landscaped area.

4. No Detached Signs

If no detached sign of any kind is employed on the development site, a twenty-five percent (25%) increase in the permitted attached sign area shall be allowed.

f. Permitted Illumination

Sign may be illuminated but shall not flash, blink or fluctuate.

g. Animation

No detached sign shall be animated or change physical position by movement or rotation.

h. Permitted Materials

The sign shall be constructed of metal or wood, or encased in a wood frame or other such materials which compliment and coordinate with the architectural style of the development.

i. The total depth of the detached sign shall not exceed five (5) feet.

4. Rate Signs

Rate signs or price signs are prohibited. Gasoline service stations shall be allowed to integrate rate and price information on gasoline prices into the detached identification signs subject to the following.

a. Free-standing signs displaying price and rate information are prohibited.

b. Price and rate information on the detached identification sign shall be limited in area to thirty percent (30%) of the surface of the sign.

c. Menu board servicing drive-up (drive-through) restaurant shall be permitted provided that;

1. One (1) menu board is located in association with the drive-thru service lanes and which is located within a minimum sixty (60) square foot landscaped area so as not to be visible from the street right-of-way from which the primary access to the premise is obtained.

2. Menu board is not located within the first twenty (20) feet of the front of the development site.

3. Menu board is not located within twenty (20) feet of a perimeter(s) of a lot adjacent to abutting residential property.

4. Menu board does not exceed forty-eight (48) square feet in total sign area and have a maximum height of eight (8) feet.

5. Sound system associated with said menu board is oriented and adjusted in such a way so that resulting noise does not intrude into surrounding development in compliance with the applicable

provisions of Section 20-102. Noise., of the Code of Ordinances of Jefferson Parish.

5. Temporary Signs

Temporary signs shall be governed by general regulations set in Section XVIII-A.

6. Directional and Instructional Signs

Directional and instructional signs limited in area to six (6) square feet, each giving directions to motorists regarding the location of parking areas and access drives, shall be permitted as accessory signs and may be attached to the building face. Free-standing directional and instructional signs shall be not more than six (6) feet in height above the ground; may be illuminated but, shall not flash, blink or fluctuate; and shall not be animated. Trade names of any kind shall not be allowed on instructional or directional signs.

7. Billboards

a. All signs not in conformance with the provisions of this district and all billboards erected prior to the enactment of this District but not in compliance with zoning regulations then in force shall be terminated as provided in Paragraph 7.b below. Such signs may continue in operation and be maintained after the placement or effective date of the Mixed Use Corridor District provided that the burden of establishing that the sign is legally nonconforming rests entirely with the person claiming such status for a sign and subject to the following:

b. All illegally erected billboards and all nonconforming signs not in conformance with the provisions of the Mixed Use Corridor District shall be terminated as follows:

1. Abandonment of thirty (30) days shall immediately terminate the right to maintain such sign.

2. Whenever such sign is damaged, destroyed or becomes obsolete for any cause whatsoever, including Acts of God, the right to maintain such sign is immediately terminated.

C. Conditions for Sign Compliance to MUCD

1. All signs not in conformance with the provisions of this Section, including general advertising signs, shall be subject to the conditions stated in Conditions for Sign Compliance, below. The burden of establishing a sign as legally nonconforming rests entirely with the person claiming such status for a sign.

2. Conditions for Sign Compliance

a. Existing signs which undergo a total replacement or change in height or area shall fully conform to Subsection 8, Sign Regulations. Normal maintenance of existing signs or changes in the face are not included under this provision.

b. Whenever a nonconforming sign is replaced it shall comply with the MUCD regulations.

c. Signs relocated on the same or different premises within the MUCD shall comply with the MUCD regulations.

D. Nothing in this ordinance shall be construed so as to allow any illegal sign in a MUCD to be considered a nonconforming sign.

## 9. DEVELOPMENT REVIEW PROCEDURES IN THE MIXED USE CORRIDOR DISTRICT

### A. General Review Procedures

Requests for development and redevelopment in the Mixed Use Corridor District shall be submitted to the Jefferson Parish Planning Department. Upon review of complete site plans, the Planning Department shall determine the level of site plan review required for the particular project. The applicant shall submit fully detailed development plans in accordance with Subsection 10, Site Plan Submittal, to the Planning Department. Development review procedures for each of the site plan review levels shall be as follows:

1. Level 1 Site Plan Review

When the Planning Department determines that the Mixed Use Corridor District regulations are fully met, the development project may proceed to the building permit process.

2. Level 2 Site Plan Review

When the Planning Department determines that the MUCD regulations are not fully met and a variance is included in the development proposal, the site plan submittal shall be reviewed in accordance with Subsection 9D, Application for Site Plan Review, the final disposition of which shall be determined by the Jefferson Parish Council. Variations in the Mixed Use Corridor District regulations may be granted by the Jefferson Parish Council through the site plan review process for the Mixed Use Corridor District provided said variations are consistent with the criteria specified in Subsection 2, District Composition, C, Site Plan Review.

B. Development Existing Prior to the Establishment of the Mixed Use Corridor District

Changes in use, additions or renovations to existing development established prior to the MUCD shall be reviewed by the Planning Department, which will determine the level of site plan review required in accordance with Subsection 9A, General Review Procedures.

1. Conditions for Compliance

Development proposals meeting any of the conditions below shall be required to comply with the criteria set in this paragraph for development existing prior to the MUCD:

a. Changes in Use:

If there is a change in the permitted use involving an increase in required parking.

b. Additions:

If there is an addition to any structure involving an increase in twenty-five percent (25%) or more to the size of the original development or structure.

c. Renovations:

If there is a renovation of any structure which exceeds fifty percent (50%) or more of the fair market value of the existing structure, as shown by the most recent tax assessment.

2. Signs

a. New signs

All new signs shall conform to the Mixed Use Corridor District regulations specified in Subsection 8 of this section.

b. Existing Signs

Existing signs which undergo a total replacement or change in height or area shall fully conform to Subsection 8, Sign Regulations. Normal maintenance of existing signs or changes in the face are not included under this provision.

3. Landscaping and Buffering Standards for Existing Development:

a. Changes to developments existing prior to the MUCD meeting any of the conditions for compliance specified in subsection 9(B1) above shall be required to landscape a minimum of ten percent (10%) of the development site. The required landscaping shall generally follow landscaping

requirements set in Subsection 6, Landscaping and Buffer Requirements, subject to space limitations of the existing development.

b. A portion of public right-of-way may be used to fulfill these requirements subject to approval by the Department of Public Works, the Department of Parkways or other appropriate agencies.

c. The trash disposal system shall be screened by a fence consisting of wood, brick or masonry with a minimum height of seven (7) feet and shall serve to completely screen said disposal system on all sides from public view.

d. A fence consisting of wood, brick or masonry with a minimum height of seven (7) feet shall be provided on the perimeter of the lot abutting residential development to buffer the Mixed Use Corridor District development from said residence(s).

4. Parking

a. The proper number of parking spaces for the land use(s) included in the development shall be provided in accordance with Section XVIII, Off-Street Parking and Loading Regulations.

b. No existing legal required parking space(s) shall be deleted to comply with the requirements set above in Subsection 9 (B3) Landscaping and Buffer Standards for Existing Development.

C. Substandard Lots of Record Within the MUCD

1. Development proposals on lots less than 10,000 square feet within the MUCD shall be submitted to the Jefferson Parish Planning Department, which will determine the level of site plan review required in accordance with Subsection 9A, General Review Procedures.

2. Lots which do not meet the site area or other requirements delineated in Subsection 4, Area Regulations, shall follow the landscaping requirements for developments existing prior to the establishment of the MUCD in Subsection 9B(3).

D. Application For Site Plan Review

1. Pre-application Conference

Prior to the submission of an application for development review a Mixed Use Corridor District, a pre-application conference with a designated representative of the Planning Department is required. The purpose of the pre-application conference is to thoroughly discuss the proposal and regulations specified in the Mixed Use Corridor District.

2. Application

a. An application for site plan review in a Mixed Use Corridor District shall be filed with the Planning Department and shall contain the following information:

1. Interest and Ownership

The applicant's name, address and interest in the application, and the name, address and interest of every person, firm or corporation represented by the applicant in the application; the concurrence of the owner or owners of the entire land included in the proposed plan and all encumbrances of such land; and sufficient evidence to establish that the applicants are all the owners and encumbrances of the designated area, and have the ability to do so.

2. Development Plans

The applicant shall submit ten (10) copies of site plans with the information listed and procedures set in Subsection 10, Site Plan Submittal, and any other information as may be necessary to describe completely the Mixed Use Corridor District Development.

3. Ordinance and Legal Attachments

An ordinance and all other legal attachments relative to the mixed use development are required at the time of application in the format specified by the Jefferson Parish Clerk of Council.

4. Fees

Fees for development in a Mixed Use Corridor District requiring site plan review as required by Subsection 9, Development Review Procedures in the Mixed Use Corridor District shall be in accordance with the following schedule:

MUCD FEE SCHEDULE FOR SITE PLAN REVIEW

| MUCD DEVELOPMENT | DOLLAR AMOUNT |
|---|---|
| Level I Site Plan Review | $150.00 |
| Level 2 Site Plan Review Building Area any size, MUCD regulations are not met and variance requested | $250.00 per acre or portion thereof and not to exceed $5,000 |

| | |
|---|---|
| Amendment To An Approved MUCD Site Plan, based on a flat fee per amendment: | $250.00 per amendment |
| Additions or Renovations to Developments Existing Prior to the MUCD: | $250.00 |

5. Administrative Examination

Upon receipt of a complete application for a development requiring review in a MUCD and with all information specified above and in Subsection 10, Site Plan Submittal, the Planning Department shall coordinate a review of the site plan with appropriate Parish departments and agencies to determine conformance to parish, state and federal codes.

Following departmental review, the Planning Department shall process the petition in accordance with Section XXVIII, Changes and Amendments, for general procedures not specified in Subsection 9, Development Review Procedures, of the Mixed Use Corridor District by the next available advertisement deadline.

A. The Planning Department shall have twenty (20) working days from the filing of a complete application to determine the review level. If no determination is made within this time limit, the application shall be forwarded to the Department of Inspection and Code Enforcement for determination of the level of review. If it is determined that a Level 2 Review is warranted, the application shall be forwarded back to the Planning Department for Level 2 Review.

B. Upon determination by the Planning Department that a Level 2 Site Plan Review is required, the first advertisement for public hearing shall be made within twenty (20) working days from the date of determination.

6. Recordation of Mixed Use Corridor District Site Plan

A development plan certified by the Planning Department as meeting the MUCD regulations in accordance with Subsection 9 or approved by the Jefferson Parish Council as a Level 2 site plan shall be recorded with the Clerk of Court. An original of same shall be furnished to the Planning Department with a copy also furnished to the Department of Inspection and Code Enforcement which shall thereafter be binding upon the applicants, their heirs, successors, and assigns; shall limit and control the issuance and

validity of permits and certificates; and shall restrict and limit the use and operation of all land and structures within the area designated in the Mixed Use Corridor District site plan and approval thereof.

3. Minor Changes in Approved Mixed Use Corridor District Site Plans

a. Minor changes needed to facilitate construction and site improvements are permitted, if such minor changes will not change the character of the approved development, nor increase the density, gross floor area, intensity of use, or ground coverage. Further no increase of total building site area, in spaces between building, the ratio of off-street parking and off-street loading area to gross floor area, or gross floor area shall be considered. No change shall be deemed minor to the approved Mixed Use Corridor District site plan that alters the approved permitted uses.

b. The Director of Planning shall review and determine what constitutes a minor or major change for an approved Mixed Use Corridor District site plan and be responsible for making minor changes on the site plan, if the request is approved. Appeals of said decision by the Planning Director shall be forwarded to the Planning Advisory Board for review, where a majority vote of the members shall be required to override the decision of the Planning Director concerning said minor change. Otherwise, an amendment to the Mixed Use Corridor District site plan shall be required, in accordance with procedures delineated in Subsection 9D(4), Amendment or Withdrawal of Mixed Use Corridor District Site Plan.

4. Amendment or Withdrawal of Mixed Use Corridor District Site Plan

Pursuant to the same procedure and subject to the same limitations and requirements by which the Mixed Use Corridor District site plan was approved and registered, any Mixed Use Corridor District site plan may be amended or withdrawn, either partially or completely, if all land and structures remaining under such Mixed Use Corridor District site plan comply with all conditions and limitations of the Mixed Use Corridor District, and all land and structures withdrawn from such Mixed Use Corridor site plan comply with all regulations established by the zoning ordinance and unrelated to the Mixed Use Corridor District.

10. SITE PLAN SUBMITTAL

The following minimum information shall be submitted to the Planning Department in the form of site plans for developments located in the Mixed Use Corridor District:

A. The name of the developer, owner, north point, date and scale of the site plan.

B. A current certified survey showing existing lots and property boundaries, streets, rights-of-way, servitudes, buildings and building setbacks, surrounding streets and important physical features on and adjoining the property and their dimensions, and total square

footage of the site. If the proposal includes a resubdivision, a separate survey shall include proposed lots, servitudes, rights-of-way and property to be revoked and dedicated.

C. Location and dimensions of all existing and proposed streets, driveways, entrances and exits, parking spaces, service bays and loading areas, sidewalks, traffic circulation patterns, directional signs and traffic signals.

D. Location, height and elevations of all existing and proposed structures showing setback dimensions, use and type of materials and color schemes.

E. Total number of residential units and floor area in square feet.

F. Total number of non-residential units and floor area in square feet.

G. Floor plans of all structures and their uses showing main floor, typical floors, layout of individual units including any accessory uses with floor area in square feet.

H. A landscaping plan of the site showing the type, size and number of plants; location of existing trees to be preserved; the location and dimensions of proposed planting beds, barrier curbs, safety triangles, fences, buffers and screening; elevations of all fences and type of materials used; and total square footage of landscaping.

I. A maintenance plan for landscaping to ensure a continuous healthy condition for plant material, and landscaped areas are kept free of debris.

J. The location, dimensions, area, type of materials and elevations of all signs and support structures.

K. Parking layout showing the number of required and proposed parking spaces.

L. Location of the trash disposal system and details of screening, including type, height and elevation of dumpster and fence.

M. Lighting plan of the site showing the location, number, type, height and materials of the fixtures.

N. Emergency services plan showing the location and dimensions of fire lanes, handicapped parking and the location of all fire hydrants within three hundred (300) feet of the site.

O. Total area of the site in square feet and the percentage of the site and total area in square feet to be used for open or green spaces, exclusive of parking area.

P. Zoning classification of the site, zoning classification and land use of surrounding property within a radius of three hundred (300) feet from the petitioned property.

Q. Utilities inventory showing the location and size of existing water, sewerage, drainage and power lines, manholes, lift stations, ditches, canals and other watercourses within the vicinity and applicable to the Mixed Use Corridor District development.

R. A phasing schedule in accordance with Subsection 11, Phased Development, as appropriate, when phasing of the project is employed.

S. Additional information as required by the Department of Inspection and Code Enforcement, Planning Department, Planning Advisory Board, Jefferson Parish Council or other Parish agency, depending on the nature and extent of the proposed development.

11. PHASED DEVELOPMENT

A. Developments within a Mixed Use Corridor District may be developed in phases, provided that the following criteria are met:

1. The more restrictive land uses and the necessary off-site improvements are completed first.

2. Each phase is independent of subsequent phases of the project and can be utilized.

3. A phasing schedule is provided in the site plan submittal at the time of the application in accordance with Subsection 10, Site Plan Submittal, containing the following information:

a. The date when construction of the Mixed Use Corridor District development will begin.

b. The number of phases in which the development will be built.

c. The dates when the development of each phase is expected to begin and be completed.

d. Specifically what infrastructure and on-site improvements will be included in each phase delineated for the development, including but not limited to service areas, access drives, parking spaces, landscaping and open space, buildings and other structures.

B. If no phasing schedule is provided at the time of the application for the Mixed Use Corridor District development, the project shall be completed as a single unit, including all on-site improvements delineated in the site plan submittal.

C. Time Limitation On Project Completion

1. Single Phase Development

Construction on single phase development in the Mixed Use Corridor District for which no development phasing schedule is submitted as provided above shall be initiated within one (1) year of approval and completed within two (2) years. Additional time may be granted by the Jefferson Parish Council for a period of one (1) year, upon finding that unforeseen circumstances prevented completion within the two (2) (2) year period and upon recommendation by the Planning Advisory Board

and Planning Department. In no case shall any development within a Mixed Use Corridor District exceed a four (4) year period.

2. Multiphase Development

Construction of multiphase developments in the Mixed Use Corridor District for which a phasing schedule is submitted as provided above shall be allowed in accordance with said phasing schedule, provided major off-site improvements are installed in the first phase of the Mixed Use Corridor District development. However, in no case shall the time taken to complete such development exceed three (3) years from approval. Additional time to complete such a development may be granted by the Jefferson Parish Council in the form of a phasing schedule revision upon finding that unforeseen circumstances prevented completion within the three (3) year period and upon recommendation by the Planning Department and Planning Advisory Board.

12. REGULATIONS, REQUIREMENTS OR STANDARDS set in the Mixed Use Corridor District are not subject to appeal to the Zoning Appeals Board.

13. TITLE RESTRICTIONS

Title restrictions shall be recorded with the Clerk of Court in favor of the Parish of Jefferson restricting the use of the property to that approved by the Jefferson Parish Council in accordance with the provisions of this section.

14. Development within a Mixed Use Corridor District shall meet all federal, state and local fire, safety and building codes, and all other applicable codes.

15. TWO YEAR LIMITATION FOR PETITIONS AND AMENDMENTS IN MIXED USE CORRIDOR DISTRICT DEVELOPMENT

Once an application for development in the Mixed Use Corridor District requiring Level 2 site plan review as defined in Subsection 2(C), Site Plan Review, of this section, or an amendment to an approved site plan is filed and meets any of the following conditions:

A. Said petition or amendment is finally acted upon by the Jefferson Parish Council in accordance with the Mixed Use Corridor District regulations;

B. Said petition or amendment has received no action on the part of the Council within one hundred and five (105) days;

C. Said petition or amendment has been allotted a docket number and officially advertised for public hearing but has subsequently been withdrawn either before or after said public hearing has been conducted;

Then the same petition or the same amendment to an approved site plan for the same property meeting any of said conditions above shall not be considered by the Council within two (2) calendar years from the date of the Council's legal action on said petition or amendment, or from the

expiration date of one hundred and five (105) days from the public hearing originally scheduled for the case in the event no action was taken.

# APPENDIX C

# APPLICABLE DRAINAGE ORDINANCES

(may be obtained from Jefferson Parish)

# APPENDIX D

On motion of Mr. Lavarine, seconded by Mr. Broussard the following ordinance was offered, as amended:

SUMMARY NO. 17569 ORDINANCE NO. 19914

An ordinance requiring specific design and review processes for storm water runoff detention systems in Jefferson Parish.

WHEREAS, it is necessary to detain excess runoff from proposed developments; and

WHEREAS, flooding has occurred throughout the Parish; and

WHEREAS, detention facilities provide drainage benefits to areas upstream, downstream and immediately adjacent to the detention facility; and

WHEREAS, FEMA, as part of a Consent Decree, requires Jefferson Parish to assure that all proposals to reduce flooding " are consistent with the need to minimize flood damage" and that "adequate drainage is provided to reduce flood hazards"; and

WHEREAS, the Parish of Jefferson agrees that it shall enforce subdivision regulations which require evaluation of the drainage impact of any proposed subdivision or other development to determine that adequate drainage is provided;

THE JEFFERSON PARISH COUNCIL HEREBY ORDAINS:

SECTION 1. That Section 14-14 is hereby added to the Jefferson Parish Code of Ordinances to read as follows:

**Section 14-14. Stormwater run-off detention.**

A. For all proposed developments,other than single family residential, totalling ten thousand square feet or more (all phases),and all single family residential developments totalling five acres or more (all phases),the ten year storm event post-development rate of run-off shall not exceed the ten year storm event pre-development rate of run-off. To insure that the post-development rate of run-off does not exceed the pre-development rate of run-off, on site detention will be required in a manner approved by the Jefferson Parish Department of Public Works. The detention system cannot release water from the site at a rate greater than the pre-development rate of run-off.

B. The design concepts for detention facilities and determination of storm run-off shall be consistent with sound hydrological and hydraulic engineering principles and practices, and the provisions of the Jefferson Parish "Storm Drainage Design Manual" dated 1981 and "Parking Lot Storm Run-off Detention Manual" prepared by the Engineering Division of the Jefferson Parish Department of Public Works. The Director of Public Works shall approve any and all modifications to the drainage manuals.

C. The developer shall submit drainage design calculations including a drainage map along with engineering plans to the Department of Public Works for approval by the Director of the Department of Engineering. The drainage map shall include a line diagram reflecting the existing drainage system from the outfall end of the proposed development to the receiving outfall canal, reflected in the applicable current Master Drainage Plan. The developer shall also submit calculations showing the impacts to the detention facility from a one hundred-year storm event.

D. Drainage calculations shall consider all relevant information that would affect the hydraulics of the drainage system including, but not limited to, the following: 1) drainage basin characteristics, 2) system hydraulics, and 3) other external influences upstream and downstream from the drainage system that may impact or be impacted by the proposed system. Drainage calculations shall consist of: 1) ten-year pre-development flow; 2) ten-year post-development flow; 3) description of release facility and volume of

release versus depth of storage in detention facility for ten-year and one hundred-year storm events; 4) maximum depth of water in the detention facility for design storms; 5) description of impact to the proposed facility resulting from increased depth of storage; and 6) the description of how the system will be maintained.

E. Unless unstable or highly erosive soil conditions indicate a lower design velocity is desirable, or unless ditch paving at the outlet is provided, the maximum velocity for culvert design shall adhere to the criteria in the Jefferson Parish "Storm Drainage Design Manual" dated 1981.

F. The Director of the Department of Public Works shall review for approval each proposed development covered by this section prior to the issuance of permits to proceed with said development. Any decision in which the Director of Public Works denies a request or which requires a variance shall be submitted to the Citizens' Drainage Advisory Board for review and recommendation. Decisions of the Citizens' Drainage Advisory Board recommending approval of a variance shall be submitted for final approval by the Parish Council.

G. Any denial of a variance request by the Citizen's Drainage Advisory Board may be appealed to the Parish Council for final resolution.

This ordinance having been submitted to a vote, the vote thereon was as follows:

YEAS: 6 NAYS: None ABSENT: (1) Jones

This ordinance was declared adopted on this the 8th day of January, 1997 and shall become effective as follows, if signed forthwith by the Parish President, ten (10) days after adoption; thereafter, upon the signature by the Parish President, or, if not signed by the Parish President upon expiration of the time for ordinances to be considered finally adopted without the signature of the Parish President, as provided in Section 2.07 of the Charter. If vetoed by the Parish President and subsequently approved by the Council, this ordinance shall become effective on the day of such approval.

Effective Date - January 18, 1997

Terrie T. Rodrigue
TERRIE T. RODRIGUE, CLERK
JEFFERSON PARISH COUNCIL

Tim Coulon
TIM COULON
Parish President

THE FOREGOING IS CERTIFIED
TO BE A TRUE & CORRECT COPY

Terrie T. Rodrigue
TERRIE T. RODRIGUE
PARISH CLERK
JEFFERSON PARISH COUNCIL

# APPENDIX E

JEFFERSON PARISH

STORM DRAINAGE DESIGN MANUAL

(may be obtained from the Jefferson Parish Department of Engineering)

# REPORT EVALUATING THE FEASIBILITY OF RETROFITTING EXISTING FLOOD CONTROL DEVICES TO IMPROVE WATER QUALITY

# FOR

# JEFFERSON PARISH

# NPDES MS4 PERMIT

**August 2005**

**Prepared For:**

**Jefferson Parish, Louisiana**

**Prepared By:**

**MWH Inc.**
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**Metairie, Louisiana 70002**
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# Table of Contents

## Report Evaluating the Feasibility of Retrofitting Existing Flood Control Devices to Improve Water Quality

## SECTION 5 – CONCLUSIONS

# Section 1
# Background and Introduction

## 1.1 INTRODUCTION

This report was developed to meet the requirements of Part II.A.4 of Jefferson Parish's (Parish) Municipal Separate Storm Sewer System (MS4) permit issued by the United States Environmental Protection Agency (USEPA) Region VI. The permit has been created by the USEPA under the National Pollutant Discharge Elimination System (NPDES) to address the water quality issues associated with the storm water runoff from the drainage areas included in the MS4 permit. The requirement for this report as stated in Table III.A. of the MS4 permit as follows:

> "Submit summary report of evaluations conducted for existing flood control devices to determine the feasibility of retrofitting to benefit water quality."

The meaning of each phrase from the above permit language will be expanded upon in the next section of this document. In order to provide some perspective on the unique nature of the drainage and flood control system in Jefferson Parish, a detailed history and maps of this system are included in the original MS4 Permit Application submittal and should be reviewed concurrently with this document. Since this document will be used to supplement the previously developed MS4 permit, it is important to have a thorough understanding of the physical system being discussed.

## 1.2 PROJECT BACKGROUND

The Parish is bound to the north by Lake Pontchartrain, to the east by Orleans and Plaquemines Parishes, to the west by St. Charles and Lafourche Parishes and to the south by the Gulf of Mexico. The drainage areas included in the MS4 are those portions of the Parish adjacent to the Mississippi River (River). The portion of the Parish north of the River is referred to as the East Bank, while the portion south of the River is referred to as the West Bank. Because much of the land in the Parish is at an elevation at or below mean sea level (MSL), the entire East Bank and a portion of the West Bank are surrounded by flood and hurricane protection levees.

The levees bordering the River are at an approximate elevation of 28 feet above MSL, and the levees bordering Lake Pontchartrain, the Barataria Basin and adjacent Parishes average about 16 feet above MSL. The difference in levee elevations is due to the separate nature of the threats against which they protect. The River levees are intended to protect against flood stage water levels in the river, while the other levees are intended to protect against hurricane induced tidal surges from Lake Pontchartrain to the north and from the Barataria Basin to the south.

As a result of this system of levees, there is no gravity drainage discharge outlet from within the MS4. This is a unique system in that storm water is pumped out of the Parish due to its relation to mean sea level. Most MS4s rely on gravity drainage; it is not necessary to pump storm water from these MS4s.

Rainfall occurring within the Parish is removed entirely by a system of conveyance canals and pumps. Over the years, the MS4 has grown into a network of over 280 miles of open drainage canals and ditches for the collection and conveyance of storm water runoff. The canals transport the runoff from the local gravity collection basins to the pumping stations. High volume, low-lift pumps are used at the pumping stations to lift the water from the canals to the higher water surface elevation of either Lake Pontchartrain or to the lakes, bayous and canals of the Barataria Basin. At this time there are no storm water discharges to the River.

## 1.3 PURPOSE OF REPORT

This report will describe the existing flood control devices, identify those agencies responsible for the construction and maintenance of those devices, summarize potential retrofits, and address the feasibility of implementing those retrofits within the MS4. A summary of the process by which flood control projects, both current and new, are initiated is described in the *Guidance Document for Assessment of Post-Construction Water Quality Impacts from New Flood Control Projects* and the *Guidance Document for Post-Construction Pollutant Controls in Areas of New Development and Re-Development* (MS4 Guidance Documents).

Currently, the Parish is in the midst of major flood control projects, as discussed in Section 3. These ongoing flood control projects have been reviewed extensively by the Parish, and State and Federal Departments for water quality impacts. These projects and ongoing operational procedures of Parish Departments were used as the basis for water quality assessments presented in this report. While the primary objective of the MS4 system is to provide drainage and flood relief, the Parish has also undertaken projects (described later) and policies (described in the MS4 Guidance Documents) that are intended to improve the quality of water discharged from the flood control system.

# Section 2
# Definitions

The requirements of this report as established by the USEPA and stated in the MS4 permit need to be evaluated by its component sections. These component sections are as follows:

- "*existing flood control devices*"
- "*retrofitting*"
- "*feasibility*"

## 2.1 EXISTING FLOOD CONTROL DEVICES

For the purposes of this feasibility report, existing flood control devices are defined as the main drainage transmission conduits, open or closed, local drainage pipes, catch basins, and the associated drainage pump stations. These devices may affect the receiving waters of the MS4 and therefore should be assessed for potential retrofit in order to benefit water quality. The levee system surrounding the Parish serves as flood control from potential storm surges from Lake Pontchartrain, the Mississippi River, and the Barataria Basin. The levee system has no direct impact on the quality of storm water and is, therefore, not assessed for potential retrofit.

## 2.2 RETROFITTING

Retrofitting is defined as the changes made to the existing flood control devices within the Parish boundaries. The potential retrofits discussed in this report are evaluated to determine if the impacts on storm water quality are beneficial, their applicability, and if they merit further investigation. Potential retrofits to the existing flood control devices to benefit storm water quality include chemical addition, detention, biofiltration, infiltration, filtration, and hydrodynamic devices.

## 2.3 FEASIBILITY

Each potential retrofit was evaluated for feasibility of installation within the Parish, based on the following criteria: the treatability for the pollutants of concern, the potential to be located in the Parish, and the economic feasibility (including construction costs and operational and maintenance costs). The feasibility also addresses whether the retrofits would impede flood waters. Retrofits that are not feasible in the Parish were not considered for further study and investigation. Retrofits feasible within the Parish will require further study beyond this report prior to installation or implementation.

# Section 3
# Flood Control Devices

This section provides a brief review of the existing flood control system in the Parish and those departments that operate and maintain the system. Projects addressing flood control and water quality that have been considered for Jefferson Parish and neighboring Orleans Parish are also described in this section. Projects that have been considered for Orleans Parish were reviewed due to the similarities of the existing flood control devices in Jefferson Parish. Many of the flood control or water quality projects that are considered feasible for Orleans Parish may also be feasible for Jefferson Parish.

## 3.1 EXISTING FLOOD CONTROL SYSTEM

Portions of the flood control system were constructed in the MS4 service area before the Parish was formed. The original settlers dug canals to improve drainage and provide lands for development. This process accelerated greatly in recent times with the construction of a system of encircling levees, transmission canals, and pump stations. The construction of these flood control systems allowed development in the Parish to support the current population density.

As described previously in MS4 Guidance Documents, the existing drainage canals within the Parish are either earthen or concrete canals. Both types of canals, regardless of construction, serve as retention basins and provide some level of pollutant removal. The earthen canals with grassy slopes function essentially as biofiltration and infiltration systems by filtering storm water through vegetation and allowing infiltration through the soil. Pollutant removal is evidenced by the regular need for dredging the canals to remove the accumulated sediment.

Many canals have been reinforced with concrete side slopes and riprap bottoms for stabilization and increased capacity. The Parish has an ongoing program to retrofit many of the earthen canals with concrete to increase the capacity of the canals. Depending on the frequency of high intensity rain events and the cleaning schedule for the canals, concrete canals can serve as detention facilities by allowing suspended solids to settle over time. Solids may settle out during low intensity rain events or periods of low flow during dry weather. However, if the canals are not cleaned out before a high intensity rain event, some solids that settled out may be re-suspended and discharged with the storm water. Concrete canals benefit the quality of storm water to a lesser degree than earthen canals.

The Parish routinely undertakes projects to improve the hydraulic transmission capacity of the canal system or increase the discharge capacity of the pump stations, and sometimes to construct new pump stations. Because of the current degree of completeness of the system, most new or future projects focus on increasing the capacity of canals and pump stations. Very few additional pump stations are expected in the near future.

There are several Parish Departments that have varying degrees of control and participation in the improvement, operation and maintenance of the components of the flood control system. In addition, several other governmental agencies also have jurisdiction over components of the flood control system. The jurisdiction and the projects implemented by the Parish Departments and other agencies are discussed below.

### 3.1.1 Jefferson Parish Department of Public Works

The most recent flood control projects undertaken solely by the Parish began in 1991 with a 53 million-dollar bond issue. These projects included drainage pump station upgrades and construction of drainage canals. Projects funded under this bond issue are completed and in service at this time. The Departments of Drainage and Engineering perform drainage or flood control work within Jefferson Parish's Department of Public Works Engineering Roads and Bridges. In addition, the Department of Capital Projects and the Southeast Louisiana Urban Flood Control (SELA) program office at the Parish also work on flood control projects. Each of these Departments performs different functions within the overall scheme of improving, operating, and maintaining the MS4 system. The following is a brief summary of the activities, relative to construction of new flood control systems, undertaken by each department.

#### 3.1.1.1 Department of Drainage

The Department of Drainage is responsible for the interior components of the MS4 system, i.e., the subsurface drainage lines, the canals leading to the drainage pump stations, and the drainage pump stations. This includes drop inlets and local piping 24 inches in diameter and larger in the unincorporated areas of the Parish. The Parish has four incorporated cities which are copermittees to the MS4 permit: the City of Kenner, City of Westwego, City of Harahan, and the City of Gretna (Cities). The Cities maintain the local drainage lines and catch basins in their respective jurisdictions that discharge to the Parish's canals. The Parish's Department of Streets is responsible for maintaining local piping smaller than 24 inches in diameter in the unincorporated areas of the Parish. One responsibility of the Department of Drainage is to maintain the hydraulic capacity of canals and pipes through dredging, cleaning, and where applicable, construction of new pipe or canal sections.

The Department of Drainage also is responsible for the operation and maintenance of the individual drainage pump stations within the Parish. The department participates in the planning and design process by reviewing plans to assess the functionality of the proposed designs.

Currently, the Department of Drainage is planning and implementing projects to increase the capacity of existing pump stations or to construct new pump stations. On the West Bank, one new pump station will be added to existing drainage basins, and additional pumping capacity will be added to two pump stations. On the East Bank, one new pump

station will be added, and two pump stations will receive capacity upgrades. All of these projects are currently in either the design or the construction phase.

### 3.1.1.2 Department of Engineering

The Department of Engineering largely handles the design of roadways, bridges, and the local drainage associated with these facilities. The department reviews the contract documents from the Department of Drainage for coordination purposes. The Department of Engineering also reviews construction plans for compliance with the resolution for detention of storm water for proposed developments.

As discussed in previous MS4 Guidance Documents, the Parish has passed a resolution requiring that storm water runoff detention provisions be included in all proposed developments (both new and re-development), other than single family residential, totaling ten thousand square feet or more (all phases). It also requires detention provisions in all single-family residential developments totaling five acres or more (all phases). In many cases, the requirements of the ordinance are met through storm water retention or detention, typically by parking lots, subsurface storage, or constructed ponds. Recreational areas, roof tops, property line swales, and porous pavement are also listed as potential areas for storage of rainfall. Multipurpose use of any rainfall or runoff storage system is encouraged by the Department of Engineering.

Paving requirements within the Parish are recommended by the Department of Engineering in areas of residential off-street parking. Porous pavement or alternative construction materials such as gravel, shell, limestone, or paving stones may serve as infiltration systems. These materials may be used in selected areas where nonporous pavement is typically used. The use of these materials would reduce the volume of storm water runoff that would be generated by nonporous surface and improve the storm water quality with infiltration.

### 3.1.1.3 Department of Environmental Affairs

The Department of Environmental Affairs is responsible for developing and implementing the programs required by the MS4 permit. The Department of Environmental Affairs works in conjunction with the other Parish Departments that have jurisdiction over the components of the existing flood control structures to implement projects that benefit storm water quality.

### 3.1.1.4 Department of Planning

As discussed in the MS4 Guidance Documents, the Parish promotes open or green space through zoning. The Department of Planning reviews construction plans and enforces compliance with the green space zoning. Currently, a Parish ordinance requires that ten percent of the vehicular use area be landscaped in addition to green space frontal setbacks. The Parish has also considered requiring side yard setbacks with landscaping. The green spaces that are promoted by the Parish, however, have limited efficiency in

improving storm water quality. Many of the required green spaces in commercial areas are constructed with a surrounding concrete curbing. Storm water runoff from the commercial areas is impeded by the concrete curbs, thus not allowing for biofiltration or infiltration.

### 3.1.2 East and West Jefferson Levee Districts

The East and West Jefferson Levee Districts (EJLD and WJLD, respectively, or Districts, collectively) operate as autonomous agencies created by the Legislature of the State of Louisiana. The Districts were created for the sole purpose of improving, operating and maintaining the levee systems that encircle the MS4 service area. The funding for the Districts is derived from local Ad-Valorem taxes. A portion of these revenues is used as the local matching portion in a cooperative agreement with the U.S. Army Corps of Engineers (Corps of Engineers).

The Districts differ somewhat in their current and future projects due to the development history of the Parish. The majority of the East Bank is developed, and there are no additional land areas that can be incorporated into the MS4 area with a new levee system. Therefore, the EJLD focuses on projects that maintain and improve the existing levee system.

The EJLD has constructed a retention dike approximately 14 to 18 inches high at the toe of the levee along Lake Pontchartrain. The retention dike extends along the levee in Jefferson Parish from the St. Charles Parish line to the Orleans Parish line. The retention dike serves to retain storm water that is accumulated as the runoff directly from the sloped levee. In the area between the levee and the adjacent residences, the retention dike accumulates the storm water runoff. The EJLD constructed the dike to prevent flooding in residences immediately adjacent to the Lake levee. The retention dike allows storm water to filter into the ground, which is eventually drained and pumped into Lake Pontchartrain.

The West Bank is experiencing growth and development that is anticipated to continue into the future. The WJLD has developed plans and routes for the construction of new levees to protect areas that are not currently leveed, but that are likely to develop as this additional protection system is completed. These new hurricane protection levees are currently under construction.

The projects undertaken by the Districts are coordinated through the Corps of Engineers. The design of projects, whether developed directly by the Corps of Engineers or by consultants, is submitted to the Corps of Engineers for permitting and environmental review.

### 3.1.3 Copermittees

As previously defined, there are four incorporated cities within the Parish that are copermittees to the MS4 permit. The Cities each maintain local drainage lines and catch basins within their jurisdiction. However, the Cities rely upon the Parish to provide a significant portion of flood control by maintaining the drainage canals and drainage pump stations.

The Louisiana Department of Transportation and Development (LDOTD) is also a copermittee to the MS4 permit. The LDOTD improves and maintains the state highways within the MS4 service area as well as the flood control devices along the state highways. The LDOTD does not develop or pursue projects that would be considered flood control in the context of this report. Although local drainage is an issue with every LDOTD project, it is the LDOTD's policy that state highways not be used for interbasin drainage. This means that their policy does not allow for the conveyance of storm water from the MS4 service area parallel to highways, within the rights of way. In this way the LDOTD effectively turns the maintenance of local flood control systems over to local authorities. The LDOTD does, of course, accommodate the drainage that must cross its rights of way, and participates in the review and permitting of these crossings.

In summary, the LDOTD assists in permitting the physical infrastructure needed to accommodate drainage flows, but does not define the needs for flood control or assess water quality impacts from drainage crossings. All LDOTD projects would be subject to the same permitting process as projects through the Parish or Corps of Engineers. Additionally, the LDOTD often prepares a "Solicitation of Views" that is sent to the appropriate agencies, including the Parish, during the conceptual design phase of a project requesting feedback on the proposed project.

## 3.2 EXISTING AND ANTICIPATED FUTURE PROJECTS

### 3.2.1 Coastal Zone Management

The Louisiana Department of Natural Resources (DNR), Coastal Management Division (CMD), approves construction projects through permitting, and DNR's Coastal Restoration Division (CRD) implements projects that create, protect, and restore Louisiana's wetlands. Most coastal restoration projects are funded through the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) and are implemented by DNR and federal agencies on the CWPPRA Task Force. The proposed projects are, assessed for impact on water quality. Wetland projects are required to have minimal impact on the receiving water bodies, as defined by the Coastal Zone Management Program and the Louisiana Department of Environmental Quality. These Coastal Zone Management projects are evaluated, budgeted and approved through a joint effort of the Corps of Engineers, the USEPA, the Natural Resources Conservation Service, the National Marine Fisheries, the U.S. Fish and Wildlife Service, and the State of Louisiana.

The DNR, CMD is a regulatory agency that regulates projects (land use) in the Louisiana coastal zone, which directly or significantly impact coastal waters. Examples of regulated projects include:

a) Projects affecting more than one water body,
b) Projects involving federal funds or state-owned lands,
c) Projects related to oil and gas exploration activities, and
d) Projects that may affect regional, state, or national interests.

For projects involving federal funds, such as the SELA program, the CMD reviews the proposed project for consistency with the directives and goals of the Coastal Zone Management Program. The primary goal of the Coastal Zone Management Program is to prevent unnecessary loss of coastal wetlands. Therefore, proposed projects are evaluated based on potential negative impacts to the coastal wetlands, and methods of eliminating or mitigating these impacts are investigated.

### 3.2.2 The SELA Program

Many ongoing flood control projects within Jefferson and Orleans Parishes are implemented under the SELA program. SELA is a 430 million-dollar flood control program established as a cooperative agreement between the Parish governments and the Corps of Engineers. The SELA program was reviewed by the Corps of Engineers at the reconnaissance stage for potential environmental impacts, as described in the *Jefferson and Orleans Parishes, Louisiana Urban Flood Control and Water Quality Management Reconnaissance Study*, July 1992 (Reconnaissance Study). The selection process for implementation and funding of specific projects under SELA is not based on the benefit to water quality, but rather based on the ability to reduce flooding. Prior to implementation, the SELA projects are, however, re-evaluated in greater detail by the Coastal Zone Management to address the water quality impacts from construction and future operations of the projects on the receiving water bodies. The construction projects under the SELA program address improvements and capacity expansion of the existing flood control system. Projects include widening and lining drainage canals and expanding pump stations.

Following is a description of the flood control projects that were reviewed, evaluated, or proposed in the Reconnaissance Study that may benefit storm water quality. These projects have not been authorized for implementation under SELA. The federal authorization for the SELA program is the Water Resource and Conservation Act of 1996. This Act authorizes the SELA program to implement drainage and flood control projects, but not water quality projects. Although these projects have not been authorized under the SELA program, they could feasibly be investigated for implementation by another agency.

### 3.2.2.1 In-Lake Wet Detention Ponds

The Reconnaissance Study evaluated the preliminary design and construction costs for in-lake wet detention ponds, or constructed wetlands, at twelve drainage outfall canals in Jefferson and Orleans Parishes (five in Jefferson Parish and seven in Orleans Parish). The purpose of the project was to reduce storm water contaminants in nearshore waters. The study estimated the approximate area affected by the construction and anticipated increased turbidity, temporary loss of benthic habitat, and the possible release of sediment bound pollutants during construction. The water treatment mechanisms created by either the wet detention ponds or the constructed wetlands may include flocculation, sedimentation, filtration, and biodegradation, depending on the specific system.

Possible negative effects of these projects included: 1) localized water quality impacts during the dredging and plant harvesting necessary to maintain these systems (these impacts include temporary increase in turbidity and potential release and redistribution of sediment bound pollutants with a simultaneous drop in dissolved oxygen levels), 2) disruption of littoral drift and nearshore circulation patterns affecting the mixing of the fresh and brackish waters and, therefore, affecting salinity, and 3) increased fecal coliforms due to the waterfowl attracted to these areas. The study concluded that the water quality improvement to Lake Pontchartrain created by the constructed wetlands would support primary contact for recreation and would improve the fishery habitat.

### 3.2.2.2 Maxent Marsh and Canal Project

SELA proposed construction of a canal and wetlands in Orleans Parish to convey and detain the first inch of storm water from nearby residential areas before discharge into the Maxent canal. The constructed marsh and canal would have long-term water quality benefits, and would provide pollutant removal, particularly of nutrients, turbidity, and dissolved solids. The project required acquisition of approximately 330 acres of brackish to intermediate marsh for the construction wetland area. Of this property, approximately 25% would suffer permanent loss of vegetation and wildlife habitat due to their burial or removal during construction with the potential loss of productivity in the remaining area.

### 3.2.2.3 Lake Cataouatche and Bayou Segnette Borrow Canal Project

The SELA Program proposed a project in the Parish to divert a portion of storm water away from Bayou Barataria to discharge to Lake Cataouatche via natural wetlands. This project involves construction of diversion channels and borrow canals to divert the first inch of storm water runoff from the Ames and Cataouatche No. 1 Pump Stations for gradual release into the natural marsh surrounding Lake Cataouatche. The project is anticipated to have long-term water quality benefits. The large detention capacity of the borrow canals would reduce stormwater contaminates by allowing sediment bound contaminants to settle. The natural wetlands would also improve water quality by means of biofiltration of contaminates previous to discharge into the receiving waters of Lake Cataouatche and/or Bayou Segnette.

#### 3.2.2.4 Drainage Pump Station to the Mississippi River

Another project proposed in the Parish by the Corps of Engineers to be included under the SELA program involves the construction of a drainage pump station in the City of Harahan on the East Bank of the Parish to pump storm water directly to the Mississippi River. The proposed pump station would divert a portion of storm water away from Lake Pontchartrain to the Mississippi River. The project was approved by the Corps of Engineers Headquarters in Washington, D.C. based on a local Corps of Engineers Section 533-D Feasibility Design Report. In this report, the Corps of Engineers recommended the project for implementation based on environmental acceptability and hydraulic modeling results. The hydraulic model showed stage lowering in the East Bank canal system and reduction in potential flood damage. The 1,200 cubic feet per second (CFS) Harahan Drainage Pump Station is currently under design.

### 3.2.3 Corps of Engineers

The Corps of Engineers also implements projects in conjunction with the Parish that are not under the SELA program. The following project was implemented as a demonstration project to benefit storm water quality. This project was not funded by the SELA program.

#### 3.2.3.1 Storage and Treatment of First Flush

In 1992, Dixon and Cunningham Consulting Engineers performed a feasibility study of capturing the first flush of storm water from a residential area for treatment at a storm water or wastewater facility. The East Bank of the Parish was selected as the study area since it has one drainage system and one primary wastewater facility. The study estimated that 400 million gallons of storage volume would be required for 0.5 inch of storm water for the East Bank. The study proposed to accommodate the required storage volume within the existing drainage canals provided that all major canals are drained prior to rain events. The estimated time required to treat the first flush storm water was four days.

The proposed force main and pump station to pump the first flush of storm water to the East Bank Wastewater Treatment Plant were constructed in 1999. The funding for this project was provided through a cost sharing agreement between Jefferson Parish and the Corps of Engineers. The pump station consists of four 5,000-gpm pumps that discharge into a 54-inch force main eventually leading to the East Bank wastewater treatment plant. The pump station was intended to pump the first 0.5 inches of stormwater and could be used as a redundant wastewater pump station should the downstream pump station or force main fail.

In conjunction with this project, the Corps and Jefferson Parish conducted limited pre-implementation sampling at six (6) sampling stations within the canal system and two (2) sampling stations within Lake Pontchartrain to determine the effects of the project on water quality. However, during the sampling period, many of the canals in the system

were either dammed or otherwise disturbed by SELA construction projects. Therefore, the results of the water quality sampling were inconclusive since the effects of the pump station project on the system could not be separated from any effects resulting from the SELA construction projects. The anticipated post-implementation sampling was not conducted due to lack of funding, and the project has been abandoned.

## 3.3 HISTORICAL PROJECTS CONSIDERED

### 3.3.1 Storm Water Disinfection Demonstration Project

During 1972, Orleans Parish conducted a temporary demonstration project using sodium hypochlorite (NaOCl) at a dosage of 100 grams per liter (g/L) NaOCl to treat storm water pumped from the City of New Orleans into Lake Pontchartrain. The results of the study are as follows:

- Coliform densities in the treated water were greatly reduced. Treated water with 0.5 milligrams per liter (mg/L) chlorine residuals (total) had total coliform removal efficiencies of 99.99%.
- Total coliform rapidly recovered to previous levels, although fecal coliform did not.
- Long term fecal coliform levels were reduced by one order of magnitude at each outfall canal.

Disinfection of storm water by chlorination causes serious environmental concerns as the chlorine may form chloramines, which are acutely toxic to aquatic life. Therefore, this demonstration project was not recommended for wide-scale or long-term implementation. Dechlorination of the water following the chlorine addition is an option to reduce chlorine residuals and reduce the production of chlorine related by products. However, the study did not include an investigation of dechlorination options and its feasibility.

### 3.3.2 East Beach Project

In 1989, the Orleans Levee District Board of Commissioners proposed the development of constructed wetlands along the shore of Lake Pontchartrain in East New Orleans. The proposed East Beach Project would provide public access to the Lake and improve storm water quality. The project proposed to reclaim an area of open water on the south shore of Lake Pontchartrain, adjacent to the Lakefront Airport and south shore harbor. The proposed wetland habitat and storm water system consisted of 124.1 acres to treat storm water.

The wetland habitat was designed to filter and treat storm water from the St. Charles Canal Pump Station. The storm water from the pump station outfall was designed to discharge through either a primary or secondary wetland system. The primary system included a forebay, wetland cell, impoundment structures and hydraulic control structures. It consisted of three separate cells in order to allow better control of the depth and flow of water and allow for maintenance procedures on one cell while two would

remain in operation. The primary system was designed for treatment of the first flush of storm water runoff.

The project was studied for feasibility, and the design of the system was completed. However, the project has not obtained funding and, therefore, has not been constructed.

## 3.4 SUMMARY

As noted in previous MS4 Guidance Documents, the Parish has made significant efforts to provide water quality improvements in the existing flood control system. The Parish has made additional efforts to improve storm water quality that are not retrofits to the existing flood control system. Non-retrofit efforts to improve storm water quality include techniques for cleaning the components of the flood control system, preventing non-storm water discharges from entering the drainage system in the first place (source controls), and public education on storm water quality.

Through the years, numerous flood control projects have been evaluated and/or implemented within the Parish. To date, the projects have been designed to prevent flooding and increase pump station capacities, and have taken precedence over projects designed specifically for water quality improvement. However, the water quality and environmental effects of these projects are studied and evaluated prior to implementation. If applicable, the proposed projects are modified to address the quality of storm water.

# Section 4
# Potential Retrofits and Feasibility Assessment

## 4.1 INTRODUCTION

Potential retrofits for improving storm water quality, or pollutant controls, typically occur within six general categories: 1) chemical addition, 2) detention, 3) biofiltration, 4) infiltration, 5) filtration, and 6) hydrodynamic devices.

For each of the general categories, a description is given for the retrofit devices. Each retrofit category was evaluated for the feasibility of physically locating the technology within the existing flood devices or within the Parish boundaries. The potential retrofits were discussed with the Parish Department of Public Works (DPW) and those Agencies that perform additional projects within the Parish, as defined in Section 3. The intent of this section is to present the feasibility assessment of the potential retrofits along with the discussion feedback received from the Parish Departments that operate and maintain the existing flood control devices.

If the potential storm water quality retrofits were determined to be feasible for installation within the Parish, the feasible retrofits are described in further detail with typical construction costs, operational and maintenance requirements, and the ability to remove pollutants of concern. The pollutants of concern were determined from the list of parameters that are monitored as a part of the requirements of the NPDES permit. The significant pollutants of concern fecal coliform bacteria, oil and grease (O&G), and nutrients.

The potential retrofits were also evaluated for their ability to allow bypass of peak storm water flows. Jefferson Parish is flat and largely below sea level and receives over 60 inches of rainfall a year; therefore, retrofit devices cannot impede the discharge of storm water that could create flooding problems within the Parish. During peak or high storm water flows, the main objective is to pump storm water out of the Parish as quickly as possible to prevent flooding. Any retrofit installed within the existing flood control devices must not impede the discharge of storm water during high flows. Peak storm water flows can be defined as the maximum capacity of the existing flood control devices. The majority of the subsurface drainage system is designed based on a 2-year storm event (6.25 inches within 24 hours). The newest subsurface drainage systems, the drainage canals and retrofit projects are designed for a 10-year storm event (9.25 inches within 24 hours).

Lower concentrations of pollutants are typically associated with peak storm water flows as compared to the higher pollutant concentrations associated with low flow. The pollutant concentration during peak flow is lower than the concentration of pollution during low storm water flows since high flows provide a degree of dilution. Thus, the ability of potential retrofits to treat peak flows is not as significant as the ability to treat low flows.

Many of the construction cost estimates were obtained from an ongoing study performed by the California Department of Transportation (Caltrans). Caltrans began pilot studies in 1997 to retrofit existing facilities with structural Best Management Practices (BMPs) to benefit storm water quality. Other construction cost estimates and operational and maintenance cost estimates are based on existing installations within other cities and quotes from equipment manufacturers.

The USEPA, through the American Society of Civil Engineers, has compiled a National Storm Water BMP Database with input from local jurisdictions, states and other organizations. This database, which includes evaluation data and associated design information for BMPs that benefit storm water quality, is continuously being updated. The database was used to obtain information on available technologies and the efficiency of pollutant removal from existing installations.

## 4.2 CHEMICAL ADDITION

The category of chemical addition systems that benefit storm water quality can be further classified as disinfection systems or solids removal systems. Both disinfection and solids removal systems require chemical storage tanks and chemical feed equipment. These systems would require a secure location for the installation of the equipment and a risk management plan to address the maintenance procedures to mitigate and respond to potential chemical releases. The chemicals used for disinfection and solids removal cause an environmental and health concern if released into the atmosphere. The chemical systems require special handling by, and training of, the maintenance personnel.

### 4.2.1 Disinfection

#### 4.2.1.1 Description

Disinfection has proved an effective treatment of pathogens and other disease-causing organisms. The chemicals used for disinfection systems are powerful oxidants and extremely hazardous materials. Disinfection options include ultraviolet radiation, chlorination, ozonation, use of chlorine dioxide, and chlorination/dechlorination with sodium hypochlorite and sodium bisulfite. As previously discussed, a disinfection system typically consists of chemical storage tanks, chemical feed pumps, and additional chemical feed equipment.

The effectiveness of disinfection is dependent on many factors including contact time, concentration of the disinfectant, type of chemical disinfectant, and the water characteristics such as temperature, pH and water quality. A disinfection system requires significant contact time, and is therefore typically used in conjunction with a detention or retention basin. A dechlorination process following chlorine addition would also require a detention or retention basin. In addition, if chlorine gas is stored in quantities greater than 2,500 pounds, a risk management plan is required.

#### 4.2.1.2 Feasibility

The majority of the disinfection systems are costly to construct, maintain and operate. Ozone contact system produce off-gases that are odorous and require additional treatment and disposal costs. Ultraviolet systems are typically submerged into the water and require frequent cleaning due to biological fouling, and would impede the flow of stormwater. The chlorination/dechlorination system has lower associated comparative costs than ultraviolet radiation and ozonation. Ultraviolet radiation and ozonation are therefore not considered feasible due to their high construction, operation and maintenance costs, and other hydraulic and environmental concerns.

Chlorination/dechlorination systems installed within the existing flood control devices would need to be located within a secure, monitored area. The chlorine disinfection system could feasibly be located within an existing drainage pump station, which falls under the jurisdiction of the Parish Department of Drainage Pump Station. Several of the drainage pump stations within the Parish are large enough to accommodate a disinfection system and provide a secure, monitored area for the equipment. Detention or retention basins, however, would be required to provide significant contact time for chlorination and an additional contact basin for dechlorination. Due to the limited availability of land area adjacent to existing drainage pump stations for detention basins, a chlorination/dechlorination system is not considered feasible within the Parish. In addition, public health and environmental concerns associated with accidental release of chlorine, and the high construction, operation and maintenance costs limit the feasibility of the system.

### 4.2.2 Solids Removal

#### 4.2.2.1 Description

Chemical precipitation involves the addition of chemicals to alter the physical state of dissolved and suspended solids and to facilitate their removal by sedimentation. Over the years, a number of different substances have been used as precipitants, the most common of which are alum (aluminum sulfate), ferric chloride, ferric sulfate, ferrous sulfate, and lime. These chemicals may be added to storm water in a dry form or as liquids.

The system for dry chemical feed requires a storage silo for the chemical and a feeding device, such as a volumetric screw, to introduce the chemical to the water. The potential for the chemical to become airborne causes an environmental concern for dry feed systems. Liquid chemical feed requires a storage tank for the chemical and a metering pump to apply the chemical to the water. This liquid system is much more simple and clean than the dry chemical feed system. As with any chemical system, proper chemical handling practices must be carefully followed.

After the chemicals have been added to the water, a detention or retention basin is required to provide time for floc to form and settle. Once settled, the solids must be periodically removed from the basins. The collection and disposal of the solids can be a

labor intense and a costly task and should be taken into careful consideration when designing these systems.

#### 4.2.2.2 Feasibility

Solids removal systems installed within the existing flood control devices would need to be located within a secure, monitored area. The chemical addition system could feasibly be located within an existing drainage pump station, which fall under the jurisdiction of the Parish Department of Drainage Pump Station. Several of the drainage pump stations within the Parish are of sufficient size to accommodate a chemical feed system and provide a secure, monitored area for the equipment. However, the detention or retention basins would be required to provide significant time for solids to settle. Due to the limited availability of land area adjacent to existing drainage pump stations for detention basins, a solids removal system with chemical addition is not considered feasible within the Parish. In addition, the frequent removal and disposal of solids and the high construction, operation and maintenance costs also prohibit the feasibility of the system.

## 4.3. DETENTION

There are two types of detention basins: dry detention and wet retention. The dry detention system acts as a drainage facility and is designed to control the peak flow rate of a larger storm event. The wet or extended retention basin is designed to capture and release a smaller storm over a specified period of time, typically 12 to 40 hours.

One detention basin project that has been implemented by the Parish is the construction of wet retention basins at the Clearview Parkway—Earhart Expressway exchange.

### 4.3.1 Dry Detention Systems

#### 4.3.1.1 Description

Dry detention systems, also referred to as dry detention basins or ponds, temporarily detain a portion of storm water runoff for a certain length of time before slowly releasing the storm water. These devices are, therefore, designed to dry out between rain events. The principal reasons for use of dry detention ponds are to reduce peak storm water discharges, control flooding, and prevent downstream channel scouring. Pollutants are removed by allowing particulates and solids to settle out of the water. Detention facilities can be concrete-lined holding tanks or earthen basins.

Dry detention basins are generally not suited for high-density residential developments since they require a large land area for installation. If the detention basin is an earthen pond, they function better in areas with sandy, permeable soils. The slow release of a small storm requires an outlet control such as a V-notch weir, or an orifice. In order to provide a slow release of the captured storm water, the outlet control is typically small. To prevent the outlet control from clogging with debris and should be maintained frequently.

Detention facilities store storm water runoff for a period of time prior to its controlled release through an outfall to a receiving water body. Detention facilities usually serve residential catchments of 5 to 50 acres, but extended detention facilities are also installed for small commercial developments of 0.25 acre.

#### 4.3.1.2 Feasibility

A typical detention facility has minimal design and construction requirements, and they are relatively easy to maintain. A detention pond does require a designated land space. The area required for the detention pond is dependent on the volume of storm water that will be collected from the catchment area.

The Parish currently requires that storm water runoff volumes from new and re-developments not exceed the volumes that occurred prior to development. Detention systems are capable of removing suspended solids from low storm water flows and accommodating peak storm water flows (offering flood protection). They are also considered to be more economical than increasing downstream conveyance capacity. Detention facilities designed for small catchment areas may be feasible for retrofit installation for the Parish. The Parish requires detention facilities in areas of new and re-development, mostly those that involve detaining water in a parking lot. The primary purpose of these facilities in the Parish is for preventing flooding of adjacent roads.

The maintenance of detention facilities, such as constructed parking lots or retention ponds, would require occasional maintenance to remove solids accumulated after storm events. The removal efficiency of solids, metals, organic matter, and fecal coliform in detention basins is moderate.

#### 4.3.1.3 Cost Estimate and Existing Installations

According to the Caltrans study, the construction cost for dry detention basins ranges in price from $27,000 to $114,000 for treatment of storm water flow at 1 cubic feet per second (cfs). Maintenance of these basins varies widely but can also be costly. Maintenance includes frequent mowing and cleaning to unclog the basin inlet and outlet. Sediment should also be cleaned out every 10 to 20 years depending on the depth or solids storage capacity of the basin. Parking lots constructed to retain storm water or retention ponds would typically be located on private property. The property owner is responsible for construction and maintenance costs.

There are several existing detention facilities, specifically parking lots, within the Parish. The newly developed parking lots are designed with subsurface drainage to detain storm water and slowly release the storm water over time through constructed weirs. Ponds are not feasible in most parts of the Parish due to limited land area, the high water table and impermeable soils.

## 4.3.2 Wet Retention Systems

### 4.3.2.1 Description

Wet retention implies permanent storage, and these systems maintain a residual water volume between rain events. These retention systems also lessen the impact of rainfall events by reducing peak flows, and they improve water quality by the settling of suspended particulates, biological uptake, and decomposition of some pollutants. Wet retention basins are generally not suited for high-density residential developments since they require a larger land area for installation than dry detention basins.

### 4.3.2.2 Feasibility

A typical retention basin has minimal design and construction requirements, and they are relatively easy to maintain. A retention basin does require a designated land space, and the land area required for retention basin is dependent on the volume of water that will be collected and stored. As previously discussed, the Parish currently requires that storm water runoff detention provisions be included in both new and re-developments. This may include retention ponds. The Parish has limited land area available for large retention basins. Wet retention facilities designed for small catchment areas are feasible for retrofit installation, in areas where there is sufficient land available for retention basins.

The maintenance of wet retention facilities would require occasional maintenance to remove solids accumulated after storm events. The pollutant removal efficiency of solids, metals, organic matter, oil and grease, nutrients, and fecal coliform in wet retention basins is moderate.

### 4.3.2.3 Cost Estimate and Existing Installations

Construction costs for wet retention basins can be high because the pond must be large enough to hold the required volume of runoff and to contain the permanent pool of water. According to the Caltrans study, the construction cost for a wet retention basin is approximately $315,000 for treatment of storm water flow at 1-cfs. The Reconnaissance Study, discussed in Section 3, estimated the gross investment required for wet retention pond construction at $340,000 per acre of land used for pond creation. This Reconnaissance Study did not provide a cost estimate based on flow capacity.

Maintenance costs are estimated at 3-5% of the construction cost per year. Wet retention systems require regular inspection, removal of sediment after 10 to 20 years, mowing, and cleaning and repair of inlets and outlets. Due to their large size, wet retention basins may not be well suited to very small developments with limited land area. They are more effective in areas with heavy clay soil where drainage is poor, which is typical for soils in the Parish. Constructed retention ponds would typically be located on private property. The property owner is responsible for the construction and maintenance costs.

The city of Pearland, Texas is utilizing wet retention ponds for storm water runoff. A program in Pearland encourages developers to purchase land in city-owned ponds as compensation for increased water runoff caused by new construction. Developers mitigate flood hazards by purchasing 0.2-0.6 acre-feet of retention space for every 1 acre of development.

## 4.4. BIOFILTRATION

Biofiltration reduces pollutant loadings by filtering storm water through vegetation. The vegetation removes contaminants through the uptake of nutrients and metals, and by physically slowing water flow to allow for removal of solids.

Numerous biofiltration processes are commonly employed throughout the United States, including constructed and natural wetlands, earthen canals, filter strips, and vegetated swales. Constructed wetlands are simulated wetlands where vegetation indigenous to natural wetlands is planted. Filter strips are areas of flat to slightly sloped property containing trees, shrubs, and/or grasses over which storm water flows in a sheet flow fashion. Swales are wide shallow ditches that are lined with vegetation.

### 4.4.1 Constructed Wetlands

#### 4.4.1.1 Description

Constructed wetlands are engineered systems that can provide many of the water quality improvement functions of natural wetlands with the advantage of control over location, design, and management to optimize those functions. Constructed wetlands can be used to reduce storm water runoff peak discharges as well as improve water quality. There are two basic types of wetland systems used to treat wastewaters: (1) free water surface wetlands, and (2) subsurface flow wetlands.

Free water surface wetlands are similar to natural wetlands. They have a carefully graded soil bottom to maintain uniform flow and inlet and outlet control structures to control water depth and regulate distribution. The water level is maintained above the ground surface, and the vegetation is rooted and emergent above the water surface. The water flow is primarily above ground. The pollutant removal processes include the purely physical processes of sedimentation via reduced velocities and biofiltration by vegetation.

Subsurface flow wetlands systems incorporate the same components described in the free water surface wetlands but also include media such as rock, gravel, and soil. The water level is kept below the top of the media, so the water flows trough the media bed. This type of system can also be referred to as vegetated submerged bed, root zone method, and rock reed filter. Subsurface systems have smaller capacities than the free water surface wetlands; subsurface systems offer a greater surface area for microbial activity, which is provided by the media. Pollutant removal rates are therefore higher for subsurface flow wetland systems than for free water surface wetlands.

#### 4.4.1.2 Feasibility

Constructed wetlands do require a designated land space, and the area required is dependent on the volume of storm water that will be collected from the catchment area. The local climate in Jefferson Parish is ideal for the wetland ecosystem, as evident by the natural wetlands that have formed in the Parish. Constructed wetlands may be feasible for retrofit installation within the Parish boundaries, where the required land is available.

As previously discussed in Section 3, the Parish and neighboring Orleans Parish have considered the installation of constructed wetlands in several drainage outfall locations, including the Bonnabel Canal and Duncan Canal. The Reconnaissance Study performed by the Corps of Engineers evaluated the ability of in-lake wet detention ponds, or constructed wetlands, to treat storm water at five drainage outfall canals in the Parish. The East Beach Project by the Orleans Levee District also evaluated the feasibility of constructed wetlands along the East New Orleans Lakefront to treat the first flush of storm water. Locations of proposed constructed wetlands have been identified in the above referenced reports for both the East and West Bank of the Parish.

Constructed wetlands are capable of accommodating peak flows. Wetland systems provide moderate to high removal of solids, organic matter, and nutrients. Oil and grease are effectively removed through impoundment, photodegradation, and microbial action. Pathogens are also removed by sedimentation, filtration, natural die-off, and UV degradation. Dissolved constituents tend to have lower removal efficiency. Removal efficiencies for metals vary but are consistently high for lead, which is often associated with particulate matter.

Constructed wetlands have significant design and construction requirements, although they require low to moderate maintenance. During the first two years, it is extremely important that nuisance vegetation is removed quarterly from constructed wetland facilities; this will insure a thriving and healthy wetlands. Subsequent maintenance comprises annual inspection for erosion, and outlet blockage, in addition to inspection of the integrity of the facility after major storms events. Additionally, these plants provide a highly desirable food source for the large nutria (*myocaster coypus*) population in the Parish. This would require significant plant replacement on a monthly basis which makes this option not very feasible until the State of Louisiana allows and promotes additional hunting of nutria. Every 7 to 10 years, the vegetation and accumulated sediment should be removed.

#### 4.4.1.3 Cost Estimate and Existing Installations

The construction costs of created wetlands are higher than the associated construction costs for wet retention basins. According to the Reconnaissance Study by the Corps of Engineers, the gross investment required for constructed wetlands creation is approximately $407,000 per acre of wetland created. The longevity is typically 20 years or more.

In Clinton, Maryland, a constructed wetland basin was created to treat storm water runoff. The wetlands located in Queen Anne County treated flow from a 16-acre drainage basin. The drainage basin included a high school and parking areas, and was mostly impervious. The wetland treatment of storm water effectively reduced suspended solids, nitrogen, and phosphorus. A similar constructed wetlands system would be feasible within the Parish at the drainage outfalls and possibly in developments where the required land is available.

Although constructed wetlands have a higher associated construction cost than other retrofit options, annual operational and maintenance costs of constructed wetlands are generally minimal; however, due to the severe nutria problem within the Parish maintenance costs would be significant.

### 4.4.2 Natural Wetlands

#### 4.4.2.1 Description

The ability of natural wetlands to improve water quality is widely recognized. Wetlands, because of their unique position in the landscape, naturally receive storm water. However, when considering diversion of storm water flows to a natural wetland, it is important to consider that wetlands have a limited capacity for handling increased flows or additional pollutant loadings. Wetlands may be impacted or altered by the introduction of an additional storm water source. Therefore, storm water management techniques specifically designed to mitigate these impacts should be used to offset some the increased volumes and velocities of runoff that cause changes to wetlands. The pollutant removal processes of wetlands include the physical processes of sedimentation via reduced velocities and biofiltration by vegetation.

#### 4.4.2.2 Feasibility

The foremost requirement to retrofit natural wetlands for storm water pollutant control is the proximity of natural wetlands to storm water discharges. Diverting storm water discharge into natural wetlands is highly feasible on the West Bank of the Parish, where they are located. The retrofit would require the construction of diversion canals to divert storm water runoff to wetland areas and modifications to existing storm water pimp stations.

As previously discussed in Section 3, the Parish and neighboring Orleans Parish have considered the installation diversion canal to natural wetlands. The Maxent Marsh and Canal Project was proposed by the Corps of Engineers to convey and retain the first inch of storm water from nearby residential areas in Orleans Parish. The Lake Cataouatche and Bayou Segnette Borrow Canal Project also proposed by the Corps of Engineers involves construction of diversion channels and borrow canals to divert the first inch of storm water runoff from Bayou Barataria for gradual release into the marshes surrounding Lake Cataouatche.

Natural wetlands are capable of accommodating peak flows; however, wetlands may be altered by a significant increase in flow. As discussed above, wetland systems provide moderate to high removal of solids, organic matter, and nutrients. Oil and grease are effectively removed through impoundment, photodegradation, and microbial action. Pathogens are also removed by sedimentation, filtration, natural die-off, and UV degradation. Dissolved constituents tend to have lower removal efficiency. Removal efficiencies for metals vary but are consistently high for lead.

Natural wetlands have low construction and maintenance requirements. Maintenance comprises annual inspection for erosion, and outlet blockage, in addition to inspection of the integrity of the facility after major storms.

#### 4.4.2.3 Cost Estimate and Existing Installations

The construction costs are relatively low and required operational and maintenance costs are minimal. The retrofit of pump stations to discharge to existing natural wetlands has significantly lower construction costs compared to construction costs associated with constructed wetlands.

In Tampa, Florida, a natural wetland basin was studied to treat storm water runoff from a 15-acre drainage basin. Approximately half of the drainage basin was impervious. The wetlands effectively reduced most pollutants associated with storm water, including suspended solids, nitrogen, zinc, copper, and phosphorus. A natural wetland system would be feasible in Jefferson the Parish in areas adjacent to natural wetlands.

### 4.4.3 Filter Strips

#### 4.4.3.1 Description

Filter strips are typically bands of close-growing vegetation, usually grass, planted between pollutant source areas and a receiving water body. They can also be used as outlet or pretreatment devices for other storm water control practices. Filter strips are used primarily in residential areas around property boundaries, roads, parking lots, streams, and ponds. Filter strips provide pollutant removal by biofiltration, infiltration of pollutant-carrying water, and sediment deposition.

#### 4.4.3.2 Feasibility

Vegetated filter strips can be retrofitted within the Parish where there are impervious surfaces adjacent to property boundaries or parking lots. Filter strips can be grassed, and regularly mowed, or planted with vegetation that requires mowing less frequently. Routine inspection is required to check for erosion or the integrity of the vegetative cover. Overall, filter strips are feasible for retrofit installation in limited, small catchment areas within the Parish. The Parish can feasibly encourage developers and property owners to install filter strips in areas of commercial development.

Filter strips allow bypass of peak storm water flows and provide low to moderate removal of solids, oil and grease, nutrients, trace metals, and fecal coliform. Filter strips have moderate to low construction and maintenance costs.

#### 4.4.3.3 Cost Estimate and Existing Installation

Filter strips may or may not be located on private property. The private property owner of the impervious area that generates the storm water runoff, would be responsible for maintaining the filter strips. The grass covered tops of the drainage canal banks currently serve as filter strips.

According to the Caltrans study, the construction cost for filter strips ranges in price from $151,000 to $1,930,000 for treatment of storm water flow at 1-cfs. This technology is generally more suitable for smaller drainage areas and are commonly used in urban settings. Filter strips were installed in Los Angeles and San Diego, California. One installation was designed to receive flow from highway runoff, and two installations were designed to receive runoff from maintenance yards. These systems are common and easily installed within the Parish along commercial areas or parking lots.

### 4.4.4 Vegetative Swales

#### 4.4.4.1 Description

Swales are earthen channels covered with a dense growth of vegetation such as grass. Swales are used primarily in residential areas around property boundaries, roads, and parking lots. Swales are not effective in areas subject to frequent roadside parking. The vehicular traffic on the swales would damage the vegetation and reduce the efficiency of treatment through biofiltration. These biofilters should be integrated into roadside landscaping plans where traffic is not anticipated.

The pollutant-removing effectiveness of swales can be moderate to negligible depending on many factors, including the quantity of flow, the slope of the swale, the density and height of the vegetation, and the permeability of the underlying soil. They remove pollutants by encouraging infiltration into the ground, reducing runoff velocity and allowing particles to settle.

To reduce soil erosion and to increase efficiency, the inflow to the swale must occur as sheet flow. Swales should be designed with small longitudinal slopes and wide bottoms to avoid soil erosion and to allow for maximum contact of the runoff with the channel bottom. Swales often have berms or small check dams integrated into the design to slow the storm water runoff velocity.

#### 4.4.4.2 Feasibility

Swales can be retrofitted within the Parish where there are impervious surfaces that can be sloped adjacent to property boundaries or parking lots. Overall, swales are feasible for

retrofit installation in limited, small catchment areas within the Parish. The Parish can feasibly encourage developer and property owners to install swales in areas of commercial development and adjacent to parking lots.

Swales allow bypass of peak storm water flows. The swales provide low to moderate removal of solids, oil and grease, nutrients, trace metals, and fecal coliform, and have moderate to low construction and maintenance costs.

Swales can be grassed, and regularly mowed, or planted with vegetation that requires mowing less frequently. Routine inspection is required to check for erosion or the integrity of the vegetative cover. Since soils in the Parish are highly impermeable, vegetation should be regularly maintained to allow for storm water biofiltration.

#### 4.4.4.3 Cost Estimate and Existing Installation

Swales may or may not be located on private property. The private property owner of the impervious area that generates the runoff would maintain the swales.

According to the Caltrans study, the construction cost for swales ranges in price from $26,000 to $620,000 for treatment of storm water flow at 1-cfs. Similar to filter strips, these systems are also best suited for smaller drainage areas and are commonly installed in urban settings. Swales have been installed in Los Angeles, California to receive storm water flow from highway runoff.

## 4.5 INFILTRATION

### 4.5.1 Description

Infiltration systems store storm water runoff and allow the water to percolate or infiltrate into the ground. These systems reduce peak storm water flow by recreating the natural infiltration that would occur without impervious surfaces. These devices also provide control of peak flows from storm water and protection of stream banks from erosion due to high flows.

There are a number of devices designed to treat storm water that make use of infiltration to remove pollutants. These devices include infiltration basins, infiltration trenches, and dry wells. The retention basins for infiltration are similar to dry detention ponds, but contain no outlets.

It is critical that infiltration devices only be installed where the soil is porous and can absorb the required quantity of storm water. Furthermore, unless fine sediments are removed from the storm water prior to discharge into the infiltration system, they will quickly become clogged, which may require rehabilitation of the system. The area must also have a reasonably deep water table (at least two feet under the bottom of the device).

### 4.5.2 Feasibility

The principle of infiltration systems is to collect and retain water in a basin to allow the water to percolate into the ground. The soil conditions for an infiltration basin must be porous. The majority of the soil in the Parish is impermeable clay and silty clay. A second requirement for infiltration systems is that the ground water level should be at least two feet under the bottom of an infiltration basin. The ground water level in the Parish fluctuates between 6 inches to 3 feet below ground surface. Due to these geologic conditions, infiltration basins are not considered feasible for retrofit installation.

As previously discussed in Section 3, the Parish currently promotes use of nonporous pavement and gravel in areas of low traffic volume. These materials can be used as alternatives to nonporous concrete and allow infiltration of storm water. Overall, porous pavements serving as infiltration systems are feasible for retrofit installation in limited areas with low traffic volume and for residential, off-street parking. However, their effectiveness is limited due to the impervious soil within the Parish. The Parish can feasibly encourage developers and property owners to install porous pavements in low traffic areas and for residential, off-street parking.

These materials also allow for bypass peak storm water flows. Porous materials provide moderate removal of solids, and oil and grease and low removal of metals. Porous materials have minimal maintenance requirements, although they provide a limited effectiveness in pollutant removal.

### 4.5.3 Cost Estimate and Existing Installations

Porous pavements have low construction and maintenance costs. Areas paved with porous materials may or may not be located on private property. The property owner of the impervious area that generates the runoff would be required to maintain the infiltration systems.

The City of Austin, Texas has used porous asphalt, concrete block, and poured concrete in several parking lot areas as test sites. Although no monitoring results are available from the test sites, the city reports shorter retention times and therefore higher runoff than expected. Construction costs associated with porous pavements are higher than the traditional, nonporous materials. Operation and maintenance costs are typically low.

## 4.6 FILTRATION

### 4.6.1 Description

Filtration systems include membrane filters and media filters. Filters can be designed to remove a particular pollutant. There are several manufactured membrane and media filters pre-designed as catch basin inserts. Filters also include buried chambers that can be filled with filter media. Small filtration devices may be installed underground in

trenches or pre-cast concrete boxes. The underground filtration devices fit well into urban settings and on sites with restricted space. Larger filtration devices are typically aboveground in self-contained media beds that can treat storm water from drainage areas as large as five acres. The catch basin inserts, underground, and above ground systems have demonstrated long lifetimes and consistent pollutant removal when properly maintained.

Fossil Filter® filtration inserts are trough-type inserts filled with granular amorphous alumina silicate media that removes pollutants by adsorption. A type of membrane filter, Stream Guard® inserts are stock-type inserts that allow collected water to filter through the geotextile fabric. The inserts are configured to remove sediment, pollutants adsorbed to sediment, and oil and grease.

The most commonly used filter media for constructed filter chambers includes sand, peat, and/or synthetic filter media. Sand filters work best in removing suspended solids. Activated carbon has been used in combination with sand and is very good in controlling most pollutants for both treated and pre-settled storm water. Peat/compost filters are appropriate for dealing with road runoff and absorb larger quantities of hydrocarbons since they have a high organic content. Peat alone is good to filter nutrients, bacteria, and organic waste, but will increase the storm water turbidity significantly.

Field research indicates that sand filters have the same effectiveness in removing suspended solids as extended detention or retention facilities. Reported removal efficiencies for other types of media have varied widely. The filter media can become plugged with debris, which can require a frequent maintenance program.

### 4.6.2 Feasibility

In-line filtration devices include catch basin inserts and filtration basins (above or below ground). Filter devices do not require a large land area. Small, above or below ground filtration basins are feasible in the Parish in areas with available land. The catch basin filter inserts can feasibly be installed as retrofits in limited areas within the Parish. The cost to install a filtration device in each catch basin, however, is not practical or desirable. Prior to installation within the Parish, catchment areas should be evaluated to determine the most effective location for filtration devices. The Parish can also feasibly encourage developers to install filtration devices in commercial areas and parking lots.

Filtration devices can be designed to allow bypass of peak storm water flows. The filtration devices using either media or synthetic membranes provide moderate removal of solids, and oil and grease, and, to some extent, metals.

Above and below ground media-filled filter beds require design and construction. The catch basin filter inserts are typically prefabricated for easy installation into existing catch basins and have fewer design requirements. Maintenance on all filtration devices would be required as deemed necessary. Depending on the quantity of solids collected, this could range from weekly to monthly maintenance. Maintenance includes removal of

sediment and debris that could clog the filters, and periodic replacement of media. Filtration devices that are not properly maintained could pose local flooding problems; therefor their installation should be limited to selected areas. There is little historical information available on the maintenance of these devices since they are relatively new designs for storm water pollutant controls.

### 4.6.3 Cost Estimate and Existing Installations

According to the Caltrans study, the construction cost of constructed media filtration basins ranges in price from $86,000 to $205,000 for treatment of storm water flow at 1-cfs. Austin, Texas and locations in Florida have made use of the large, above ground media-filled filtration devices. Underground filters have been installed in Florida, Maryland, Delaware, and the District of Columbia. Both types of filters use some form of pre-treatment to remove sediment, floating debris, and oil and grease to protect the filter. After the storm water passes through the pretreatment device, it flows into the media filter bed, where sediment particles and pollutants adsorbed to the sediment particles are captured in the media.

A storm water management in-line filtration system was put into place in Washington County, Oregon, consisting of an underground concrete vault housing rechargeable cartridges filled with a variety of filter media. As storm water flows through the filters, it is discharged into collection pipes.

Currently, Los Angeles, California is testing several types of filtration devices for feasibility of removing storm water pollutants. The Fossil Filter® and Stream Guard® have been installed at three maintenance station locations. They were placed in areas that likely generate oil and grease and other constituents commonly found in maintenance runoff. According to the Caltrans study, the construction cost of catch basin filtration inserts ranges in price from $650,000 to $880,000 for treatment of storm water flow at 1-cfs. Maintenance costs are high due to the frequency of maintenance required.

## 4.7 HYDRODYNAMIC DEVICES

Hydrodynamic devices use the flow of water to assist with physical separation of pollutants. Hydrodynamic designs include screens and catch basin inserts of several varieties. The majority of these devices are catch basin inserts, i.e. oil and water separators, while others are replacement structures. Most contain some sort of treatment mechanism associated with sedimentation, filtration, or gravitational separation of oil and water.

### 4.7.1 Bar Screens

#### 4.7.1.1 Description

Screens are devices with openings, generally of uniform size that are used to retain or screen the coarse solids in storm water. The screens are composed of parallel bars or

rods. Bar screens effectively remove floatables from storm water. Screens can either be hand cleaned or mechanically cleaned of the debris that is accumulated. Screens are located as in-line devices in catch basins, pipe lines or drainage canals.

#### 4.7.1.2 Feasibility

As discussed in previous MS4 Guidance Documents, the drainage pump stations within the Parish are currently equipped with bar screens to protect the drainage pumps. The screens effectively remove large solids from storm water in drainage canals and pump stations. The bar screens on all drainage pump stations have a maximum clearing space between the bars of three and a half inches. The bar screens can also provide removal of smaller solids when larger solids accumulate on the screens. The accumulation of materials performs as a filter and decreases the effective spacing between the bar screens. The amount of floatables and trash removed by the bar screens is detailed in the MS4 Annual Report.

The feasibility of retrofitting existing pump stations with smaller bar screens was discussed with the Parish Department of Drainage Pump Stations. If smaller screens were installed at the pump stations, the stations would require larger pumps to compensate for the additional head loss. The Department of Drainage suggested that an overall increase in capacity of the pump stations is more feasible than retrofitting pump stations with smaller screens and larger pumps. The Parish is currently increasing the capacity of several pump stations and catchment areas in order to reduce flooding. The construction plans do not, however, include design for smaller bar screens. Increasing the capacity of the pump stations is beneficial for flood control, but does not benefit storm water quality unless smaller screens are included in the design.

Overall, it is not feasible to install smaller bar screens within the existing drainage pump stations due to the hydraulic constraints of the canals and pump stations. The existing screens provide for the removal of large solids and debris. Increasing the capacity of existing drainage pump stations to compensate for smaller bar screens is moderately feasible. However the removal of only a magnitude small solids and debris do not out weigh the additional construction, operational and maintenance costs. The level of solids removal by the existing screens is adequate.

#### 4.7.1.3 Cost Estimate

Design and construction costs to increase the capacity of pump stations to compensate for smaller bar screens are high. Maintenance requirements and costs for screens are currently included in the Parish budget. Due to the high construction costs and design requirements, installing smaller bar screens is moderately feasible.

## 4.7.2 Catch Basin Separation Inserts

### 4.7.2.1 Description

There are several types of catch basin separation inserts, including screens, oil and water separators, and vortex solids separators. These devices use gravity and the water's energy and centrifugal forces to separate solids in the storm water.

Manufactured screens for catch basins, such as the Hydro-Jet Screen™, have typically been used for CSO systems. They contain dry weather flows within the system and pass directly to a treatment facility. Under storm conditions, though, flows increase, and the outlet orifice restricts the pass of flow to the treatment facility. The water level in the Hydro-Jet Screen inlet channel rises, and excess storm water flows discharge over the adjustable weir. The overflow passes through the screen, trapping floatables and solids on its surface. Prior to discharge to the receiving water body, the flow passes through an air-regulated siphon, initiating the screen backwash cycle. This cleans the screen and flushes the solids to a collection channel, which leads to a treatment facility. This screen can also be used to remove pollutants from dry weather groundwater flows in storm sewers.

The Hycor® ROMAG screen by Waterlink® is a fine bar screen that is designed for both combined sewers and storm water outfalls. The screen fits directly into the storm water channel or retention basin and forms a protective barrier to prevent solids from getting into lakes, streams, and on shorelines. It is self-activating, self-cleaning, and is designed to accommodate remote, unattended locations.

One example of a physical control that may be installed beneath the pavement in lieu of a catch basin or manhole is the Stormceptor™. This device is designed to enhance removal of sediments and oil. The Stormceptor™ is divided into a lower storage/separation chamber and the upper bypass chamber. Normal flows are diverted into the lower treatment chamber where oil and other light non-aqueous phase liquids rise and become trapped. Suspended solids settle to the bottom of the chamber by gravity and centrifugal forces. During high flow conditions, the bypass chamber conveys water to the down stream storm sewer, directly circumventing the lower chamber. This prevents the resuspension and scour of settled pollutants.

Another device that is designed to capture coarse sediment, and oil and grease from storm water runoff is the Continuous Deflection Separator (CDS)™. The CDS™ device introduces storm water into the side of the vessel, where it spirals down the perimeter creating a vortex, allowing heavier particles to settle out by gravity and by the drag forces on the wall and base of the chamber. Solids are directed towards the base of the vessel in a sump, where they are stored until removed. The storm water rotates about the vertical axis, and by the time it reaches the top of the vessel, it is virtually free of solids and is discharged through the outlet pipe.

The BaySaver® Separation System relies on gravity flow and density differences to remove free oils, suspended sediments, and floating debris from storm water runoff, retaining the collected pollutants in storage structures. It consists of two precast manholes and a high-density polyethylene separation unit. The two manholes allow the removal and storage of pollutants, while the separator unit directs the flow of water. The primary manhole sits in-line with the storm drain and collects coarse sediments, while the storage manhole is off-line and receives only limited flows, allowing for the removal of fine sediments, free oils, and floating debris. The separation unit in between the manholes directs flow to the storage manhole during low flow conditions, splits the direction during moderate flows, or acts as a bypass during extreme flows.

Another type of in-line storm-water filtration device consists of a chamber that is configured to use the water's energy to create a vortex. These devices, such as the Reg-U-Flo Vortex Valve and the Storm King®, are capable of removing floatables as well as inducing sedimentation. These separators have up to six times the treatment rate of conventional separators. The Storm King® separator was installed in Columbus, Georgia, and the Reg-U-Flo Vortex Valve was installed in King County, Washington. There is little historical data, however, that analyzes the efficiency of pollutant removal of these systems.

#### 4.7.2.2 Feasibility

Hydrodynamic devices are ideal for use in high traffic parking lots, industrial maintenance facilities, gas and service stations, highway storm water runoff, and pretreatment for subsequent pollutant controls. The catch basin separator inserts effectively remove suspended solids and oil and grease present in low storm water flows. A bypass for peak flows is typically included in the design of the inserts. The inserts are designed for installation as a retrofit into existing catch basins, and they can easily be inserted into the existing flood control devices within the Parish. The catch basin inserts are also relatively low cost for individual units. The cost to install a separation insert in each catch basin, however, is not practical. Catch basins should be evaluated to determine the most effective location for the separators prior to installation. Areas within the Parish that historically receive large quantities of solids or litter may benefit from the devices. The Parish can also feasibly encourage developers to install catch basin separator inserts in commercial areas and parking lots.

Maintenance on the devices would be required as deemed necessary. Maintenance includes cleaning the chambers to remove the collected solids. The frequency of maintenance is highly dependent on the drainage areas, street cleaning practices, and frequency of storm events. Depending on the quantity of solids collected, this could range from weekly to monthly maintenance. There is little historical information available on the maintenance of these devices since they are relatively new designs for storm water treatment.

### 4.7.2.3 Cost Estimate and Existing Installations

Currently, Los Angeles, California is testing several types of catch basin separation inserts for feasibility of removing storm water pollutants. The CDS™ and oil/water separators have been installed at four locations. They were placed in areas that likely generate oil and grease and other constituents commonly found in maintenance runoff. The average costs for the catch basin separation inserts range in price from $105,000 to $207,000 for treatment of storm water flow at 1-cfs. In addition, they may impede the flow of water during a heavy storm event. Maintenance costs are high due to the frequency of maintenance required.

# Section 5
# Conclusions

## 5.1 ONGOING STUDIES

Several organizations are evaluating ongoing retrofit studies and compiling operational data on storm water pollutant controls. Caltrans is involved in large storm water quality monitoring and research projects. As part of this effort, they are designing, installing, and monitoring a number of retrofit technologies. This is a comprehensive field-testing program of these devices. The goal of the studies performed by Caltrans is to determine the cost-effectiveness and water-quality benefits of structural storm water pollutant controls. Data has been collected for the initial testing of the devices, and additional data will be compiled for the devices over the next few years.

The USEPA, through the American Society of Civil Engineers, is also compiling a National Storm Water BMP Database with input from local jurisdictions, states and other organizations. This database includes evaluation data and associated design information for storm water pollutant controls. The long-term goal is to improve the technical design of the technologies and to match their selection and design to local storm water problems. Data is continuously compiled as new controls are evaluated.

Because of the great deal of information that is continuously updated on storm water retrofit devices, it is recommended that the Parish further study some of the options discussed in this report. The information gained from further study would allow the Parish to make an informed decision on the capability and feasibility of storm water retrofit devices.

## 5.2 ONGOING FLOOD CONTROL PROJECTS WITHIN JEFFERSON PARISH

The Parish has and will continue to evaluate the feasibility of retrofitting existing flood control devices to benefit water quality. Several new flood control projects within the Parish are retrofits to the existing flood control system and also benefit storm water quality. These ongoing flood control projects were discussed previously in the MS4 Guidance Documents and were also reviewed in Section 3 of this report.

## 5.3 FEASIBILITY SUMMARY

An effective system of pollutant controls addresses point as well as nonpoint sources of pollutants throughout the drainage area that cannot be effectively controlled at the source. It is also important to address the benefit of installing more than one type of pollutant control. A combination or a system of pollutant controls addresses the removal of a wider range of pollutants of concern. It is recommended that the Parish determine the feasibility of installing a combination of retrofit devices prior to implementation of a specific option.

The following retrofits, or a combination thereof, merit further study:

**Table 5-1**
**Summary of Feasible Retrofits**

| Retrofit | Comparative Cost | Pollutant Removal | Overall Feasibility |
|---|---|---|---|
| Natural wetlands | Low construction and maintenance costs | Moderate to high removal of BOD, O&G, Solids, Nitrogen, Phosphorous, Metals, Fecal Coliform | Applicable to areas of Jefferson Parish adjacent to wetlands |
| Constructed wetlands | High construction and low to moderate maintenance costs | Moderate to high removal of BOD, O&G, Solids, Nitrogen, Phosphorous, Metals, Fecal Coliform | Limited by cost to construct and maintain. Large amount of area needed. Plants may be eaten by nutria. |
| Filter strips and swales | Moderate to low construction and maintenance costs | Low to moderate removal of Solids, O&G, Phosphorous, Metals, Fecal Coliform | Restricted to low density areas |
| Dry detention basins | Moderate to high construction and moderate maintenance costs; solids removal after 10 to 20 years | Moderate removal of BOD, COD, Solids, Metals, Fecal Coliform | Limited to areas of available land |
| Wet retention basins | High construction and moderate maintenance costs; solids removal after 10 to 20 years | Moderate to high removal of BOD, COD, O&G, Nitrogen, Phosphorous, Metals, Fecal Coliform | Limited to areas of available land |
| Hydrodynamic devices | Moderate construction and high maintenance costs; frequent maintenance | Moderate to high removal of O&G, Solids; low removal of Metals | Applicable to small developments |
| Filtration system – catch basin inserts | Moderate to high construction and high maintenance costs; frequent maintenance | Moderate removal of O&G, Solids; low removal of Metals | Applicable to small developments |

**Table 5-1**
**Summary of Feasible Retrofits**

| Retrofit | Comparative Cost | Pollutant Removal | Overall Feasibility |
|---|---|---|---|
| Infiltration systems – porous pavements | Low construction and maintenance costs, system failure after 5 years | Moderate removal of O&G and Solids; low removal of Metals | Highly restricted by soils, groundwater, traffic and area |

BOD – Biochemical Oxygen Demand
O&G – Oil and Grease

Natural wetlands are effective in treating the majority of pollutants of concern, listed above in Table 5-1. Natural wetlands can be designed to allow bypass of flood waters and can feasibly be located within the Parish boundaries. Retrofitting natural wetlands to receive increased storm water flows would require low construction costs and low maintenance costs. Natural wetlands are considered a highly feasible retrofit option.

Constructed wetlands have been extensively researched for treatment of storm water in the region surrounding the Parish boundaries. Similar to natural wetlands, constructed wetlands are effective in treating the majority of pollutants of concern. Constructed wetlands can be designed to allow bypass of flood waters, and can feasibly be located within the Parish on both the East and West Bank. Constructed wetlands, although they represent a higher construction cost, have low to moderate maintenance requirements. Maintenance requirements may decrease after initial start up of the system; however, these plants are extremely palatable to nutria and may have to be constantly replenished. Constructed wetlands are considered an option that warrants further study.

Both filter strips and swales provide limited removal of the pollutants listed above. These biofilters can feasibly be located within the existing flood control system to treat small catchment areas. Filter strips and swales allow for bypass of flood water. They also have low construction costs and maintenance requirements. Filter strips and swales are restricted for use in small, low density catchment areas, mainly on private property.

Dry detention basins provide moderate removal of the pollutants listed above. Dry detention basins allow for bypass and provide control of flood waters. Small detention facilities can feasibly be located within the existing flood control system to treat small catchment areas, but they are limited to areas with available land. The associated construction costs are high, and maintenance requirements are moderate. Small dry detention facilities warrant further study; however, they may be limited by soil types and water table levels in the area.

Wet retention basins provide moderate to high removal of the pollutants listed above. Wet retention basins allow for bypass and provide control of flood waters. Similar to dry detention basins, small wet retention facilities can feasibly be located within the existing flood control system to treat small catchment areas. The location of retention facilities is limited to areas with available land. The associated construction costs are high and

maintenance requirements are moderate. Small wet retention facilities are considered feasible retrofits in limited areas.

Hydrodynamic devices can effectively remove solids, oil and grease, and, to some extent, metals. Most devices are constructed to allow bypass of flood waters. They can feasibly be located within the existing catch basins on private property, or in the instance of screens, can be installed in the existing drainage pump stations. Construction costs and the maintenance requirements to install catch basin separation inserts in all catch basins within the Parish is not feasible. Catch basin separation inserts are feasible for retrofit installation in selected areas. Retrofitting screens on the existing drainage pump stations is less feasible due to the higher construction cost to retrofit the drainage pump stations.

Filtration systems, both membrane and media filters, effectively remove solids, oil and grease, and, to some extent, metals. Most filtration devices are capable of bypassing flood water and can feasibly be located within the existing catch basins. Construction costs and the maintenance requirements to install filters in all catch basins within the Parish is not feasible. Filtration devices are feasible for retrofit installation on private property in selected areas.

Although infiltration basins are not considered feasible, alternative materials to concrete such as porous pavement that allow storm water to infiltrate are considered feasible in limited areas. The alternative infiltration materials are moderately effective in removing suspended solids, oil and grease, and, to some extent, metals. Porous materials do not impede flood water and can feasibly be located within the Parish. Construction costs and maintenance requirements are relatively low. Porous pavement and gravel can feasibly be used to retrofit non-permeable surfaces in limited, low-traffic volume areas.

***JEFFERSON PARISH***

***LIST OF INDUSTRIAL & HIGH RISK (I&HR) FACILITIES***

| | Facility Name | Address | City | St | Zip | TRI Facility | NPDES Permit | Type |
|---|---|---|---|---|---|---|---|---|
| 1 | AAA Cooper Transportation | 620 Dakin St | Jefferson | LA | 70121 | | LAR05M415 | Gen-LAR05-Multi-Sector |
| 2 | ABF Freight Systems Inc | 400 Shrewsbury Rd | Jefferson | LA | 70121 | | LAR05M036 | Gen-LAR05-Multi-Sector |
| 3 | Adams Land & Marine Ltd | 141 Maxwell Ln | Marrero | LA | 70072 | | LAG480652 | Gen-LAG48-Light Commercial |
| 4 | Airgas Priority Nitrogen LLC | 1101 Destrehan Ave | Harvey | LA | 70058 | | LAG480973 | Gen-LAG48-Light Commercial |
| 5 | Airline Salvage Inc | 6900 Airline Hwy | Metairie | LA | 70003 | | LAR05M467 | Gen-LAR05-Multi-Sector |
| 6 | Anthony Savarino Crane & Rigging Inc | 1000 Justin Rd | Metairie | LA | 70005 | | LAR05N602 | Gen-LAR05-Multi-Sector |
| 7 | A-Quality Auto Sales | 1420 N Causeway Blvd | Metairie | LA | 70001 | | LAG750047 | Gen-LAG75-Exterior Vehicle Wash |
| 8 | ArcelorMittal LaPlace LLC - ArcelorMittal Recycling Harvey | 4390 Peters Rd | Harvey | LA | 70058 | | LAG480949 | Gen-LAG48-Light Commercial |
| 9 | Ashton Marine LLC | 1200 Peters Rd | Harvey | LA | 70058 | | LAR05N601 | Gen-LAR05-Multi-Sector |
| 10 | Avondale Container Yard Inc | 101 Avondale Garden Rd | Avondale | LA | 70094 | | LAG480159 | Gen-LAG48-Light Commercial |
| 11 | Avondale Engineering & Construction Co | 550 Modern Farms Rd | Waggaman | LA | 70094 | | LAG480913 | Gen-LAG48-Light Commercial |
| 12 | B&G Crane Service | 7001 Ivy St | Metairie | LA | 70003 | | LAG750592<br>LAR05N010 | Gen-LAG75-Exterior Vehicle Wash<br>Gen-LAR05-Multi-Sector |
| 13 | B&G Crane Service | 725 Central Ave | Jefferson | LA | 70121 | | LAR05N009 | Gen-LAR05-Multi-Sector |
| 14 | Barriere Construction Co LLC | 1910 Peters Rd | Harvey | LA | 70000 | | LAG110262 | Gen-LAG11-Concrete/Asphalt |
| 15 | Beverly Industries Inc - Sandpit | off Hwy 541 (River Rd) | Bridge City | LA | 70096 | | LAG490070 | Gen-LAG49-Sand and Gravel |
| 16 | Beverly Industries LLC | 1215 River Rd | Bridge City | LA | 70094 | | LAG110229 | Gen-LAG11-Concrete/Asphalt |
| 17 | Beverly Industries LLC | 1214 River Rd | Nine Mile Point | LA | 70094 | | LAG490022 | Gen-LAG49-Sand and Gravel |
| 18 | BFI Waste Services LLC dba Allied Waste Services of New Orleans | 808 L&A Rd | Metairie | LA | 70001 | | LAR05P420 | Gen-LAR05-Multi-Sector |
| 19 | Blackwater Harvey LLC | 1805 Fourth St | Harvey | LA | 70058 | | LA0126890 | Indiv-Minor Industrial |
| 20 | Bohn Brothers Toyota | 3611 Lapalco Blvd | Harvey | LA | 70058 | | LAG470073 | Gen-LAG47-Auto Repair/Dealers |
| 21 | Bollinger Quick Repair LLC | 615 Destrehan Ave | Harvey | LA | 70058 | X | LA0007137<br>LAR05M762 | Indiv-Minor Industrial<br>Gen-LAR05-Multi-Sector |
| 22 | C&C Coatings LLC | 2900 Peters Rd | Harvey | LA | 70058 | | LA0121207 | Indiv-Minor Industrial |
| 23 | Carlo Ditta Inc - Plant #1 | 1445 Macarthur Ave | Harvey | LA | 70058 | | LAG110026 | Gen-LAG11-Concrete/Asphalt |
| 24 | Carnival Wrecker Service LLC | 2565 Breaux Ave | Harvey | LA | 70058 | | LAR05N439 | Gen-LAR05-Multi-Sector |
| 25 | Cherry Street Grocery Inc - Manhattan Blvd Seafood & Meat Market | 2140 Manhattan Blvd | Harvey | LA | 70058 | | LA0127079 | Indiv-Minor Industrial |
| 26 | Chet Morrison Contractors LLC - Harvey Fab | 3434 Peters Rd | Harvey | LA | 70058 | | LAG480833 | Gen-LAG48-Light Commercial |
| 27 | Chevron USA Inc - Harvey Terminal | 1075 Peters Rd | Harvey | LA | 70058 | | LAR05P790<br>LAR05P791 | Gen-LAR05-Multi-Sector<br>Gen-LAR05-Multi-Sector |
| 28 | Clint Jacob - Jake's Towing & Salvage | 5901 Hwy 90 | Avondale | LA | 70094 | | LAR05P838 | Gen-LAR05-Multi-Sector |
| 29 | Cooper Consolidated 111 LLC - Azalea Fleet | 9600 River Rd | Waggaman | LA | 70094 | | LA0070637 | Indiv-Minor Industrial |
| 30 | Cornerstone Chemical Co - Fortier Plant | 10800 River Rd | Waggaman | LA | 70094 | X | LA0004367<br>LAG670178 | Indiv-Major-Industrial<br>Gen-LAG67-Hydrostatic Test |
| 31 | Crane & Templet I Am Blessed Properties LLC | 1913 Peters Rd | Harvey | LA | 70058 | | LAG470405 | Gen-LAG47-Auto Repair/Dealers |
| 32 | D&A Shipyard Express LLC | 4640 Peters Rd | Harvey | LA | 70058 | | LAR05P662 | Gen-LAR05-Multi-Sector |
| 33 | Dale's Quality Car Care Inc | 1414 Manhattan Blvd | Harvey | LA | 70058 | | LAG470392 | Gen-LAG47-Auto Repair/Dealers |
| 34 | Delta Auto Wreckers Inc | 7000 Airline Dr | Metairie | LA | 70003 | | LAR05M589 | Gen-LAR05-Multi-Sector |
| 35 | Delta Petroleum Co Inc | 3000 Airline Dr | Metairie | LA | 70001 | X | | |
| 36 | Deltide Fishing & Rental Tools Inc | 1131 Peters Rd | Harvey | LA | 70058 | | LAR05P625 | Gen-LAR05-Multi-Sector |
| 37 | Don Bohn Buick Pontiac GMC | 3801 Lapalco Blvd | Harvey | LA | 70058 | | LAG470316 | Gen-LAG47-Auto Repair/Dealers |
| 38 | Don Bohn Ford | 3737 Lapalco Blvd | Harvey | LA | 70058 | | LAG470061 | Gen-LAG47-Auto Repair/Dealers |
| 39 | Don Bohn Used Cars | 3660 Lapalco Blvd | Harvey | LA | 70000 | | LAG470217 | Gen-LAG47-Auto Repair/Dealers |

***JEFFERSON PARISH***

***LIST OF INDUSTRIAL & HIGH RISK (I&HR) FACILITIES***

| | Facility Name | Address | City | St | Zip | TRI Facility | NPDES Permit | Type |
|---|---|---|---|---|---|---|---|---|
| 40 | Dynamic Industries Inc - Harvey South Yard Facility | 2804 Peters Rd | Harvey | LA | 70058 | | LAG480497 | Gen-LAG48-Light Commercial |
| 41 | Evonik Cyro LLC - MMA Plant | 10800 River Rd | Waggaman | LA | 70094 | X | | |
| 42 | FMT Shipyard & Repair LLC - Vessel Maintenance Repair & Fabrication Yard | 3640 Peters Rd | Harvey | LA | 70058 | X | LAG030001 | Gen-LAG03-Vessel Cleaning |
| 43 | FNO AG LLC dba Cadillac of New Orleans | 3100 Lime St | Metairie | LA | 70006 | | LAG470115 | Gen-LAG47-Auto Repair/Dealers |
| 44 | Frank L Beier Radio Inc - Boat Stuf | 2499 Peters Rd | Harvey | LA | 70058 | | LAG470423 | Gen-LAG47-Auto Repair/Dealers |
| 45 | General Chemical LLC | 6526 Fourth St | Marrero | LA | 70073 | | LAR05N796 | Gen-LAR05-Multi-Sector |
| 46 | Greater New Orleans Landfill | 5700 Hwy 90 W | Avondale | LA | 70094 | | LAR05N752 | Gen-LAR05-Multi-Sector |
| 47 | Hebert's Trucking & Equipment Service LLC | 5110 Carmelite St | Crown Point | LA | 70072 | | LAG470369 | Gen-LAG47-Auto Repair/Dealers |
| 48 | Hinyub & Hinyub Enterprises Inc - Manhattan Carwash | 1612 Manhattan Blvd | Harvey | LA | 70058 | | LAG750944 | Gen-LAG75-Exterior Vehicle Wash |
| 49 | Hunting Energy Services Inc | 6615 River Rd | Marrero | LA | 70072 | | LAG480527 | Gen-LAG48-Light Commercial |
| 50 | Huntington Ingalls Inc - Ingalls Shipbuilding Div Avondale Operations | 5100 River Rd | Avondale | LA | 70094 | | LA0000060<br>LAR05M191 | Indiv-Minor Industrial<br>Gen-LAR05-Multi-Sector |
| 51 | Hwy 90 LLC - Hwy 90 C&D Landfill | 5000 Hwy 90 | Avondale | LA | 70094 | | LAG780020 | Gen-LAG78-C&D Landfills |
| 52 | IESI LA Corp - East Bank Citizen Trash Drop-Off Site | 400 David Dr | Metairie | LA | 70003 | | LAR05P263 | Gen-LAR05-Multi-Sector |
| 53 | IESI LA Corp - IESI Bridge City | 500 Bridge City Ave | Bridge City | LA | 70094 | | LAG480641 | Gen-LAG48-Light Commercial |
| 54 | IESI LA Corp - Jefferson Parish Sanitary Landfill | 5800 Hwy 90 W | Avondale | LA | 70094 | | LAR05M138 | Gen-LAR05-Multi-Sector |
| 55 | IESI LA Corp- Marrero Citizen Trash Drop-Off Site | 6440 Lapalco Blvd | Marrero | LA | 70072 | | LAR05P264 | Gen-LAR05-Multi-Sector |
| 56 | IMTT-Gretna LLC - Gretna Facility | 1145 Fourth St | Harvey | LA | 70058 | | LA0003484 | Indiv-Minor Industrial |
| 57 | International Matex Tank Terminals LLC - IMTT-Avondale | 5450 River Rd | Avondale | LA | 70094 | | LA0075981 | Indiv-Minor Industrial |
| 58 | JAG's | 4601 Jefferson Hwy | Jefferson | LA | 70121 | | LAG750609 | Gen-LAG75-Exterior Vehicle Wash |
| 59 | Jefferson Fiberglass Co Inc | 1524 MacArther Ave | Harvey | LA | 70058 | X | | |
| 60 | Jefferson Parish Department Drainage Pump Station - Ames Pump Station | 5100 Rochester Dr | Marrero | LA | 70072 | | LAG530921 | Gen-LAG53-Sanitary Class I |
| 61 | Jefferson Parish Department Drainage Pump Station - Cataouatche #1 Pump Station | 3901 Hwy 90 | Avondale | LA | 70094 | | LAG530922 | Gen-LAG53-Sanitary Class I |
| 62 | Jefferson Parish Department Drainage Pump Station - Cousins Pump Station | 2466 Destrehan Ave | Harvey | LA | 70058 | | LAG530920 | Gen-LAG53-Sanitary Class I |
| 63 | Jefferson Parish Department Drainage Pump Station - Hero Pump Station | 2466 Destrahan Ave | Harvey | LA | 70058 | | LAG530919 | Gen-LAG53-Sanitary Class I |
| 64 | Jefferson Parish Department Drainage Pump Station - Westminster & Lincolnshire Pump S | 2050 Watling Dr | Marrero | LA | 70072 | | LAG530923 | Gen-LAG53-Sanitary Class I |
| 65 | Jefferson Parish Department of Public Works - Jonathan Davis Plantation | Hwy 301, 4 Mi S of Kerner Bridge | Barataria | LA | 70036 | | LA0068292 | Indiv-Minor-Sanitary |
| 66 | Jefferson Parish Department of Sewerage - Bridge City WWTP | 1900 Hwy 90 | Bridge City | LA | 70055 | | LA0042064 | Indiv-Major-Sanitary |
| 67 | Jefferson Parish Department of Sewerage - Harvey STP | 2342 Pailet St | Harvey | LA | 70055 | | LA0042081 | Indiv-Major-Sanitary |
| 68 | Jefferson Parish Department of Sewerage - Marrero WWTP | 6250 Lapalco Blvd | Marrero | LA | 70055 | | LA0042048 | Indiv-Major-Sanitary |
| 69 | Jefferson Parish Law Enforcement District - 2nd District Substation | 1551 Central Park Blvd | Harvey | LA | 70058 | | LAG533222 | Gen-LAG53-Sanitary Class I |
| 70 | Jefferson Parish Law Enforcement District - 3rd District Station | 6001 Leo Kerner Blvd | Marrero | LA | 70072 | | LAG533628 | Gen-LAG53-Sanitary Class I |
| 71 | Jefferson Parish Law Enforcement District - 4th District Station | 6228 Airline Dr | Metairie | LA | 70003 | | LAG533394 | Gen-LAG53-Sanitary Class I |
| 72 | Jefferson Parish Sewerage Department | 1400 Hwy 90 | Bridge City | LA | 70072 | | LAR05M128 | Gen-LAR05-Multi-Sector |
| 73 | Jefferson Parish Water Department - Eastbank Water Plant | 3600 Jefferson Hwy | Jefferson | LA | 70121 | | LAG380037 | Gen-LAG38-Potable Water |
| 74 | Jefferson Parish Water Department - Jefferson Parish Westbank Water Plant | 4500 Westbank Expy | Marrero | LA | 70072 | | LAG380028 | Gen-LAG38-Potable Water |
| 75 | JP & Sons Inc | 8900 River Rd | Waggaman | LA | 70094 | | LAG490010 | Gen-LAG49-Sand and Gravel |
| 76 | K&J Truck Repair Services Inc | 724 Peters Rd | Harvey | LA | 70058 | | LAG470350 | Gen-LAG47-Auto Repair/Dealers |
| 77 | K&S Diesel Service Inc | 913 Peters Rd | Harvey | LA | 70058 | | LAG470410 | Gen-LAG47-Auto Repair/Dealers |
| 78 | Kansas City Southern Railway Co - New Orleans Yard | 220 Airline Dr | Metairie | LA | 70001 | | LAR05P515 | Gen-LAR05-Multi-Sector |
| 79 | Kemira Water Solutions Inc | 10800 River Rd | Waggaman | LA | 70094 | X | | |
| 80 | Kinder Morgan/Delta Terminal Services LLC - Harvey Terminal | 3540 River Rd | Harvey | LA | 70058 | | LA0056600 | Indiv-Minor Industrial |
| 81 | Kody Marine LLC | 600 Peters Rd | Harvey | LA | 70058 | | LAR05N498 | Gen-LAR05-Multi-Sector |

***JEFFERSON PARISH***

***LIST OF INDUSTRIAL & HIGH RISK (I&HR) FACILITIES***

| | Facility Name | Address | City | St | Zip | TRI Facility | NPDES Permit | Type |
|---|---|---|---|---|---|---|---|---|
| 82 | Lafarge North America Inc - Airline Plant | 3320 Airline Dr | Metairie | LA | 70001 | X | LAG110005 | Gen-LAG11-Concrete/Asphalt |
| 83 | Lafarge North America Inc - Westbank Plant | 1950 Ames Blvd | Marrero | LA | 70073 | | LAG110008 | Gen-LAG11-Concrete/Asphalt |
| 84 | Lakeside Imports Inc - Lakeside Collision Center | 3224 36th St | Metairie | LA | 70001 | | LAG470070 | Gen-LAG47-Auto Repair/Dealers |
| 85 | Leson Chevrolet Co Inc | 1501 Westbank Expy | Harvey | LA | 70058 | | LAG470171 | Gen-LAG47-Auto Repair/Dealers |
| 86 | Magellan Terminals Holdings LP - Marrero West Terminal | 5200 River Rd | Marrero | LA | 70072 | | LA0003816<br>LAR05P227 | Indiv-Minor Industrial<br>Gen-LAR05-Multi-Sector |
| 87 | Marmac LLC - McDonough Marine Service - Harvey Canal Fleet Harvey Canal Mile 4.5 | Harvey Canal Mile 3.0 & 5.0 | Harvey | LA | 70058 | | LA0115631 | Indiv-Minor Industrial |
| 88 | Martin Operating Partnership LP - River Ridge Facility | 100B Florida St | River Ridge | LA | 70123 | | LAR05P439 | Gen-LAR05-Multi-Sector |
| 89 | MI SWACO - Harvey District Office | 4300 Peters Rd Bldg A | Harvey | LA | 70058 | | LAG750531<br>LAR05M477 | Gen-LAG75-Exterior Vehicle Wash<br>Gen-LAR05-Multi-Sector |
| 90 | National Oilwell Varco LP - NOV Petrex Process Systems - Destrehan Avenue Facility | 2465 Destrehan Ave | Harvey | LA | 70058 | | LAG480948 | Gen-LAG48-Light Commercial |
| 91 | New Orleans Shipyard | 8400 River Rd | Waggaman | LA | 70094 | X | | |
| 92 | NOV Petrex Process Systems - Peters Road Facility | 3450 Peters Rd | Harvey | LA | 70058 | | LAG480905 | Gen-LAG48-Light Commercial |
| 93 | Ochsner Clinic Foundation - Ochsner Health System | 1514 Jefferson Hwy | Jefferson | LA | 70121 | | LA0006751 | Indiv-Minor Industrial |
| 94 | Pull-A-Part of New Orleans West LLC | 4401 Peters Rd | Harvey | LA | 70058 | | LAR05N923 | Gen-LAR05-Multi-Sector |
| 95 | Reagan Power & Compression LLC | 2230 St Joseph Rd | Harvey | LA | 70054 | | LAG480039 | Gen-LAG48-Light Commercial |
| 96 | Retif Oil & Fuel LLC - Harvey Facility | 527 Destrehan Ave | Harvey | LA | 70058 | | LA0109428 | Indiv-Minor Industrial |
| 97 | River Birch LLC - River Birch Landfill | 2000 S Kenner Ave | Avondale | LA | 70094 | | LA0099473 | Indiv-Minor-Industrial-Major Mod |
| 98 | River Parish Disposal LLC | 7201 Airline Dr | Metairie | LA | 70003 | | LA0100757 | Indiv-Minor Industrial |
| 99 | Riverside Food Distributors LLC - F Christiana & Co | 7251 River Rd | Marrero | LA | 70072 | | LA0083216 | Indiv-Minor Industrial |
| 100 | Riverside Used Auto Parts Inc | 4604 River Rd | Marrero | LA | 70072 | | LAR05M609 | Gen-LAR05-Multi-Sector |
| 101 | Safety Kleen Systems Inc | 3000 Airline Dr | Metairie | LA | 70001 | | LAG480080 | Gen-LAG48-Light Commercial |
| 102 | Saia Motor Freight Line LLC | 3301 Andover St | Jefferson | LA | 70181 | | LAR05M508 | Gen-LAR05-Multi-Sector |
| 103 | Southeast Louisiana Flood Protection Authority | 7001 River Rd | Marrero | LA | 70072 | | LA0106607 | Indiv-Minor Industrial |
| 104 | Sports & Imports | 2433 Hickory Ave | Metairie | LA | 70003 | | LAG470203 | Gen-LAG47-Auto Repair/Dealers |
| 105 | Stewart & Stevenson Services - New Orleans Branch Facility | 1400 Destrehan Ave | Harvey | LA | 70058 | | LAG480221 | Gen-LAG48-Light Commercial |
| 106 | Turner Industries Group LLC | 401 Jefferson Hwy | Jefferson | LA | 70121 | | LAG750189 | Gen-LAG75-Exterior Vehicle Wash |
| 107 | Union Pacific Railroad - Avondale Yard | 5245 River Rd | Avondale | LA | 70094 | | LAG480135 | Gen-LAG48-Light Commercial |
| 108 | US Minerals Inc | 3860 Peters Rd | Harvey | LA | 70059 | | LAG480174 | Gen-LAG48-Light Commercial |
| 109 | Vertex Refining LA LLC | 5000 River Rd | Marrero | LA | 70072 | X | | |
| 110 | Vetco Gray Inc | 3601 Janus St | Harvey | LA | 70058 | | LAG480164 | Gen-LAG48-Light Commercial |
| 111 | Warrior Energy Services Corp | 1209 Peters Rd | Harvey | LA | 70059 | | LAR05N176 | Gen-LAR05-Multi-Sector |
| 112 | Waste Management of Louisiana LLC - Harvey | 1220 Peters Rd | Harvey | LA | 70058 | | LAG480784 | Gen-LAG48-Light Commercial |
| 113 | Wood Resources LLC | 8200 River Rd | Waggaman | LA | 70094 | | LAG490020 | Gen-LAG49-Sand and Gravel |

# ALLOWABLE NON-STORM WATER DISCHARGES

**JEFFERSON PARISH**
**MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT**
**LAS000201**

**Prepared by**
**JEFFERSON PARISH**

**JUNE 2016**

**IMPLEMENTATION AND AUGMENTATION OF THE STORM WATER MANAGEMENT PROGRAM FOR JEFFERSON PARISH NPDES MS4 PERMIT**

**ALLOWABLE NON-STORM WATER DISCHARGES**

The Jefferson Parish Municipal Separate Storm Sewer System (MS4) permit issued by the USEPA on March 1, 1997, requires that each permittee "contribute to the development, revision and implementation of a comprehensive Storm Water Management Program (SWMP) including pollution prevention measures, treatment or removal techniques, storm water monitoring, use of legal authority, and other appropriate means to control the quality of storm water discharged from the Municipal Storm Sewer System."

Table III.A. of the permit requires that Jefferson Parish and the Cities of Gretna, Harahan, Kenner, and Westwego, "Submit a list of non-storm water discharges categories exempt from the prohibition on non-storm water discharges to the MS4, along with any limitation on these discharges, and reasons for determinations."

The permit (Part III.A.6) requires that non-storm water discharges to the MS4 shall be effectively prohibited by the permittees. However, certain discharges need not be addressed as illicit discharges by the permittee nor prohibited from entering the MS4 for the purposes of this permit. These discharges include: "discharges regulated by a separate NPDES permit; discharges for which an NPDES permit application has been submitted; and non-storm water discharges identified by the permittee as specified in item a below.

a. Permittees shall identify in the Storm Water Management Program any categories of non-storm water that are not prohibited from being discharged in the Municipal Separate Storm Sewer System, in accordance with conditions described in items (1) and (2) below:

   (1) Categories of non-storm water discharges that the permittee(s) may exempt from the prohibition on non-storm water entering the Municipal Storm Sewer System include those either:

      (a) Listed in 40 CFR 122.26 (d) (2) (iv) (B) (1); or

      (b) Other similar occasional incidental non-storm water discharges (e.g. non-commercial or charity car washes).

   (2) Categories of non-storm water discharges exempted from the prohibition on non-storm water must not be reasonably expected [based on information available to the permittees] to be significant sources of pollutants to the Municipal Separate Storm Sewer System, because of either:

      (a) The nature of the discharges; or

      (b) Conditions placed on the discharges by the permittees.

The Storm Water Management Program shall describe any local controls or conditions placed on the discharges exempted from the prohibition on non-storm water. Permittees shall prohibit any individual non-storm water discharge otherwise exempted under this paragraph from the prohibition on non-storm water that is determined to be contributing significant amounts of pollutants to the Municipal Separate Storm Sewer System."

Jefferson Parish Drainage Disposal Law (Section 27-157 through 27-165 of the Jefferson Parish Code) defines categories of discharges which are allowed or excluded from the MS4. The requirements of the Drainage Disposal Law, both qualitative and quantitative, supersede any allowance for non-storm water discharges cited herein. For example, discharges resulting from the cleaning of a commercial building are allowed, as long as foaming or frothing agents of a persistent nature are not discharged in sufficient concentrations as to create foaming or frothing in the storm drainage system. In addition, no discharge is permitted in violation of an existing NPDES, LPDES, or LWDPS permit irrespective of any allowances cited herein or deemed acceptable under the Drainage Disposal Law.

These requirements are in addition to and supersede the conditions included in the following table. The following table included with this technical memorandum provides the non-storm water discharge categories defined by the permittees to be exempt from the prohibition on non-storm water discharges as required by the permit.

# LIST OF NON-STORM WATER DISCHARGE CATEGORIES EXEMPT FROM PROHIBITION OF NON-STORM WATER DISCHARGES TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OF JEFFERSON PARISH, LA

| Category | Conditions | Reasons for Determination |
|---|---|---|
| Discharge of potable water from operation and maintenance of the municipal water treatment and supply system (i.e., distribution system flushing, storage tank flushing, etc.) | None | Consists of the discharge of treated potable water |
| Runoff from Industrial/Commercial Lawn Care | Does not include runoff from areas where chemicals and/or equipment are stored. | Consists of the discharge of water applied to landscaped areas around commercial or industrial buildings. Lawn care stewardship practices (fertilizer, herbicide. and pesticide use) will be promoted through the public educational program. State regulations currently exist which govern the legal application of these products. |
| Runoff from large managed turf areas such as municipal or commercial golf courses, parks and cemeteries | Should fertilizer, pesticides or herbicides become a problem in the MS4, Jefferson Parish reserves the right to require a permit for the discharge of water from these areas. | Consists of discharge of water applied for irrigation. Lawn care stewardship practices (fertilizer, herbicide and pesticide use) will be promoted through the public education program. State regulations currently exist which govern the legal application of these products. |
| Groundwater discharges to canals from water table | None | Consists of the discharge of uncontaminated groundwater from naturally occurring processes |
| Groundwater and accumulated rain water discharges from construction de-watering | The discharge must be in accordance with appropriate Best Management Practices | Consists of the discharge of uncontaminated pumped groundwater and accumulated rain water. |
| Runoff from residential home and car washing | Non-commercial | Consists of the discharge of treated water with some chemicals (soaps, etc.) which is considered to have negligible water quality effects due to the low volume, low intermittent nature of the discharge. Home stewardship practices will be promoted through the public education program. |

| Category | Conditions | Reasons for Determination |
|---|---|---|
| Runoff from industrial or commercial building or parking lot washing | None | Consists of the discharge of treated water with some chemicals (soaps, etc.) which is considered to have negligible water quality effects due to the low volume, intermittent nature of the discharge. Appropriate use of commercial cleaners will be promoted through the public education program. |
| Charity car wash events | None | Intermittent, low volume has negligible effect on MS4. Appropriate use of cleaners will be promoted through the public education program. |
| Groundwater discharges from foundation drain or sump pumps | None | Consists of the discharge of uncontaminated groundwater and rain water. |
| Condensation from exterior central air conditioning systems | None | No contact with sources of contamination |
| Discharge from drainage and maintenance of swimming pools | None | Consists of the discharge of water, intermittent in nature and negligible in quantity. Due to the nature of the MS4, i.e. large open conveyance canals, chlorinated discharges are not significant sources of pollutants. |
| Wash water form street sweeping and cleaning | Incidental wash water from mechanical street sweepers | Consists of discharge water in minimal amounts. Incidental and intermittent in nature. |
| Discharges from Fire Prevention and Control | None | Public safety. Discharge consists of potable water and approved firefighting chemicals. Intermittent and low volume in nature, therefore considered to have negligible impact on water quality. |

## APPENDIX C: ORDINANCES

Below is a description of the ordinances related to stormwater management. These ordinances are available online at the following address:
https://www2.municode.com/library/la/jefferson_parish/codes/code_of_ordinances

| | |
|---|---|
| Section 2-574 | Department of Public Works serves as focal point for actions concerning the citizens drainage advisory board |
| Section 7-28 | Clean-up and disposal of animal excreta in sanitary manner (Pooper Scooper) |
| Section 8-5-118.23.2 | Amendment addressing the use of grease traps |
| Section 13-6 | Immediate reporting to 911 of accidents or incidents involving hazardous material that pose an exposure risk to any sewage, drainage or water line |
| Section 13-7 | Procedures for cleaning up hazardous materials spills |
| Section 16-4 | Solid waste containers to be watertight and leakproof. Household hazardous wasted to be handled and stored in accordance with State requirements. |
| Section 16-6 | Vehicles or containers used for the collection and transportation of toxic or hazardous wastes shall be durable, enclosed and leakproof, and shall be constructed, loaded, moved and unloaded in a safe manner in compliance with the applicable regulations of the State Department of Health. Vehicles or containers used for collection and transportation of garbage shall be covered, leakproof, durable metal and of easily cleanable construction. These shall be cleaned at appropriate intervals to prevent pollution and shall be maintained in good repair. |
| Section 16-8 | No person shall litter any public or private premises |
| Section 16-9 | Prohibits littering and dumping of any debris, trash, trees or garbage into drainage ditches, canals or catch basins. Also prohibits that dumping or blowing of grass clippings into streets or storm drains. |
| Section 16-10 | Prohibits disposal of wastes by burning on any public or private premises |
| Section 16-56 through Section 16-68 | Incinerator regulations that prohibit nuisance emissions. All incinerators or incineration devices must have approval by air control commission prior to installation or construction. Requires incineration facility to post operating procedure in a conspicuous manner (noticeable). Requires incineration facilities to meet the State Sanitary Code. Facilities are subject to inspection. |
| Section 16-101 through Section 16-108 | Regulates transport and disposal of medical waste, including commercial and residential medical waste |
| Section 17-32 through Section 17-34 | Air Pollution Control regulations that prohibit emission of dense smoke, soot, cinders, noxious acids, fumes and gases from any source in any such manner as to be detrimental to the public health. |
| Section 19-16 | Prohibits accumulation, collection or the keeping, depositing on or scattering on any person's premises any of the following: trash, debris, refuse, junk, abandoned equipment, machinery, refrigerators, freezers, air conditioners, cans, containers, abandoned or noxious matter. |
| Section 20-120 | Restrictions on the use of phenoxy-based compounds to prevent runoff and/or drift |
| Section 25-51 through Section 25-53 | Coastal Zone Management Program conserves and restores valuable wetlands that serve to filter runoff; erosion control. |

| | |
|---|---|
| Section 26-35 | Requires sewerage disposal, water and fire protection for all living accommodations, campers and trailers and the submittal of proof to the Parish Council. |
| Section 27-16 | Requires inspections of all sewerage and drainage lines installed in the Parish to ensure tightness. |
| Section 27-71 | Makes dumping of trash or garbage of the placing of mail boxes, screens, etc., or placement of objects in drainage system unlawful. |
| Section 27-72 | Requires approval for any obstructions to drainage pipe, drainage structure, open ditch, or canal. |
| Section 27-107 | Allows the authority to prevent the ponding of water and breeding of mosquitoes by property owners. |
| Section 27-142 through Section 27-151 | Sewage Disposal Law – Regulates proper disposal of sewage waste |
| Section 27-150 | Director's duties and powers with controlling prohibited waste |
| Section 27-157 through Section 27-165 | Drainage Disposal Law – Prohibits the discharge of water into the stormwater drainage system |
| Section 27-159 | Prohibits the discharge of wasted into stormwater drainage system and gives basic requirements of the discharge of waste |
| Section 27-161c | Specific prohibitions and limitations concerning the discharge of wastewater into stormwater |
| Section 27-162 | Permits industrial waste discharges and prohibits illicit discharges |
| Section 27-163 | Monitoring and reporting requirements and reporting of accidental discharges so that corrective action may be taken |
| Section 27-164 | Control of prohibited waste, powers and duties of director |
| Section 27-165 | Enforcement of Drainage Disposal Law |
| Section 27-176 | Prohibits unauthorized tampering of fire hydrants |
| Section 27-179 | Prohibits unauthorized tampering of valves, lines, etc. |
| Section 27-213 | Cross connection program |
| Section 27-214 | Violations and penalties |
| Section 28-10 | Immediate reporting to office of communication services (911) of derailment or release of hazardous materials |
| Section 29-3 | Discharging refuse, oil or other objectionable matter into the ditches or gutters of public streets or roads is prohibited. |
| Section 29-4 | Requires approval from the Department of Public Works for any concrete slabs across open ditches or culverts whose purpose is to drain rainfall. |
| Section 33-1 through Section 33-6.5 | All subdivision proposals shall have sewerage and drainage facilities reviewed by Department of Public Works, Planning Advisory Board. |
| Section 34-1 | Requires all plumbing and drainage installation for swimming pools to conform with Parish building code. |
| Section 36-97 | Prohibits repair of automobiles and trucks on public streets and sidewalks. |
| Section 37-18 | No person shall use the neutral grounds, parks, sidewalks or publics places to dump grass clippings, tree trimmings or refuse of any nature. |
| Section 39-8 | Erosion Control – limiting wave action on Bayou Barataria |

## APPENDIX D: NPDES MS4 PERMIT