Municipal Separate Storm Sewer Systems (MS4) Update 2014

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What is an MS4? (Municipal Separate Storm Sewer System)

The term “MS4” is commonly used to describe both:

- The infrastructure used to convey storm water runoff
- The owner/operator of the infrastructure that is permitted to discharge this runoff

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MS4 Definition

First, "separate storm sewer system" includes a system of ditches, curbs, gutters, storm sewers, and similar means of collecting or conveying runoff that do not connect with a wastewater collection system or treatment plant.

And to be a "municipal separate storm sewer system" (MS4), the system must be owned or operated by a public agency—for example:

- a city or town
- a municipal utility district, flood control district, or other special district
- a county
- a state or federal agency

Regulatory Citations:

Federal Regulations: 40 CFR 122.26(b)(8)

State Regulations: LAC33: IX: § 2511.B.4 (Large MS4) and B.16 (Small MS4)

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Why is stormwater a problem?

- Urban Runoff is one of the leading sources of impairment in our rivers, lakes and estuaries (305(b) reports); storm water pushes pollutants such as oil from parking lots, garbage, chemicals from industrial sites, pesticides, etc. into the storm drainage system, then into surface waters

- Development in urban areas increases storm water volume (less green space) and velocity and decreases groundwater recharge

Traditional vs. Non-Traditional MS4s

MS4 Infrastructure

- Some MS4s carry groundwater or piped streams; tidally-influenced MS4s can be linear or more complex
- MS4s may be open, piped, manmade, natural, or a combination of all of these things
- Influenced, or have some other constant source of non-stormwater discharge
- A system which is a combined sewer or discharges directly to a POTW is not considered an MS4

How is Storm Water Regulated Under the LPDES Program?

LPDES: Louisiana Pollutant Discharge Elimination System

- Phase I: Regulated discharges from **large and** medium MS4s,(> 250,000; > 100,000)- CWA §402(p)(2)
- Phase II: Regulated discharges from **small MS4s** (everything that isn't a medium or large!) – CWA §402(p)(6)

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Small MS4s (typically < 100,000 in population)

- According to 40 CFR 122.26(b)(16), small MS4s are similar to large and medium except they may be owned or operated by the **United States** and includes systems similar to separate storm sewer systems in municipalities such as **systems at military bases, large hospital or prison complexes, and highways and other thoroughfares** but does not include storm sewers in very discrete areas, such as individual buildings.

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Regulated Small MS4s - U.S. Census

- Currently permitted MS4s were required to obtain coverage based on the 2000 census
- The 2010 census requires more municipalities in LA to obtain coverage and develop a Storm Water Management Plan or may require MS4s to expand their programs into other areas
- The urbanized area maps are used as the basis for MS4 requirements, although LDEQ may designate MS4s outside of the urbanized areas

Urbanized Area Definition

A central place (or places) and the adjacent densely settled surrounding territory that together have a minimum residential population of 50,000 people and a minimum average density of 1,000 people/square mile.

Permit Waivers/State-Designated MS4s

- Permit coverage MAY be waived if the MS4 meets the requirements of LAC 33: IX § 2519.D-E
- LDEQ may designate MS4s that are outside of urbanized areas (e.g. Fort Polk, Natchitoches)

Typically, size of the MS4, population density, and water quality are the major factors considered

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Waivers

- Request must be made in writing to the LDEQ Water Permits Division
- Population < 10,000
- LDEQ will evaluate receiving waters
- No TMDLS with MS4 allocations
- LDEQ determines storm water will not likely cause noncompliance with water quality standards

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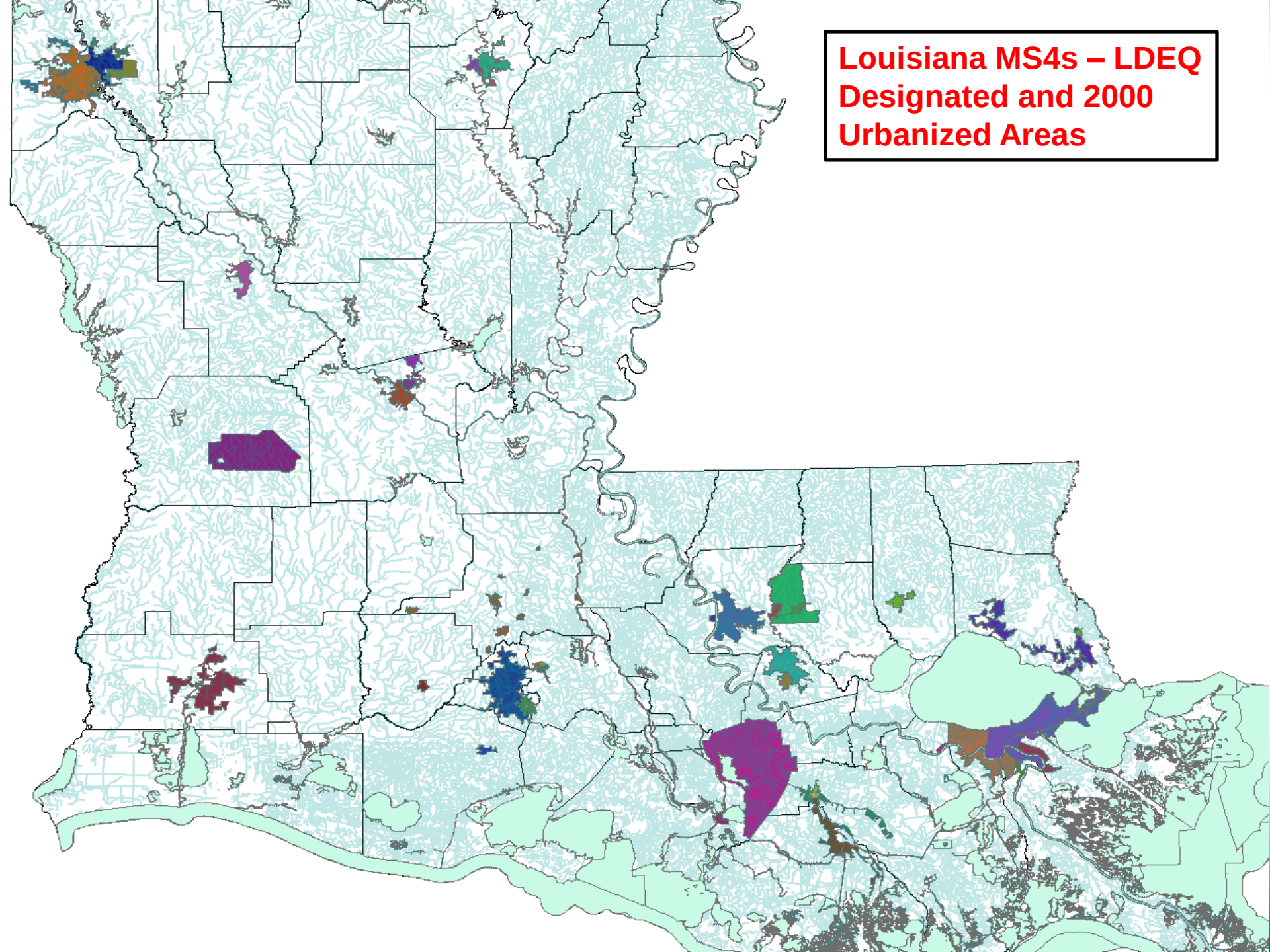
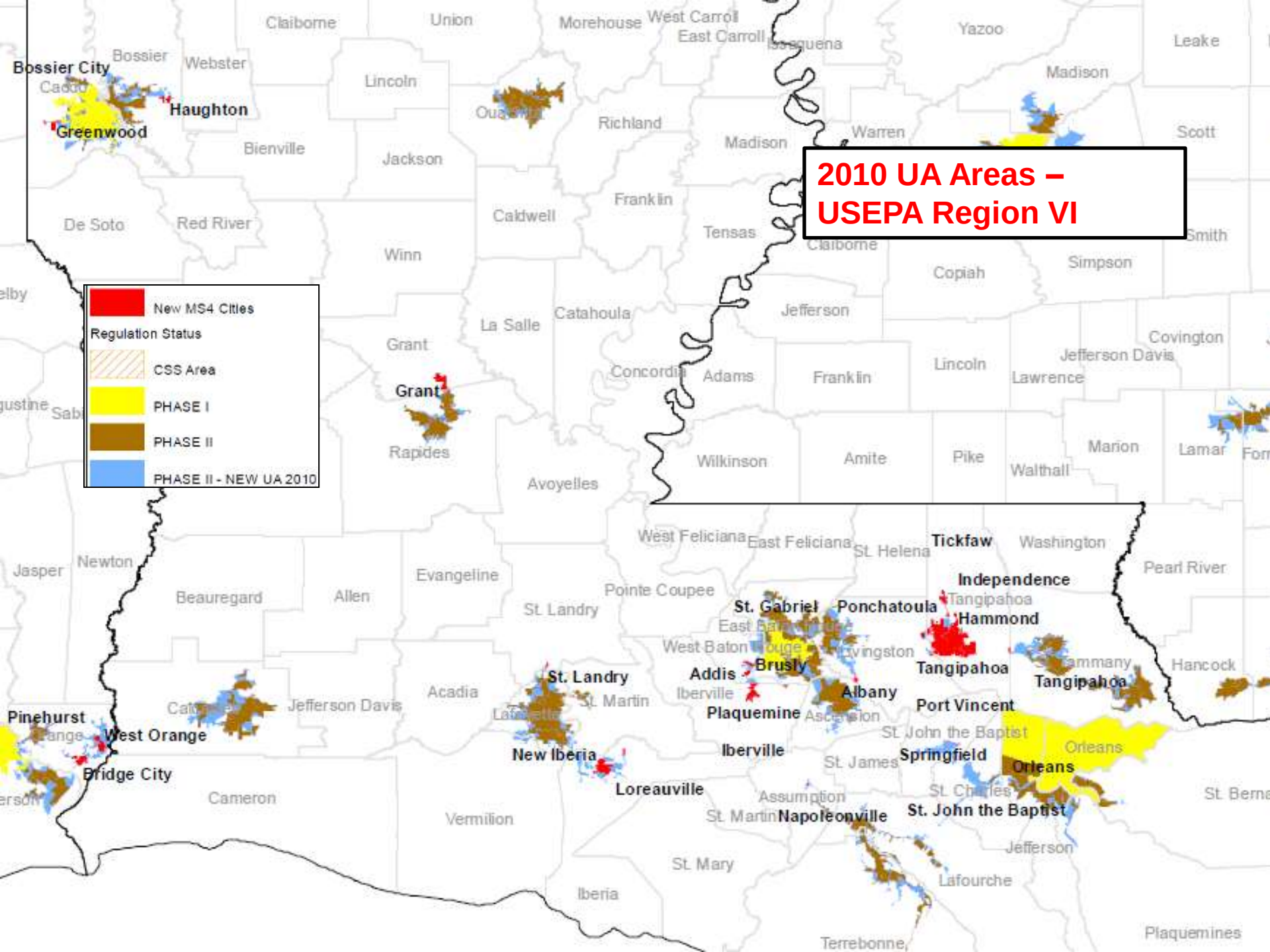
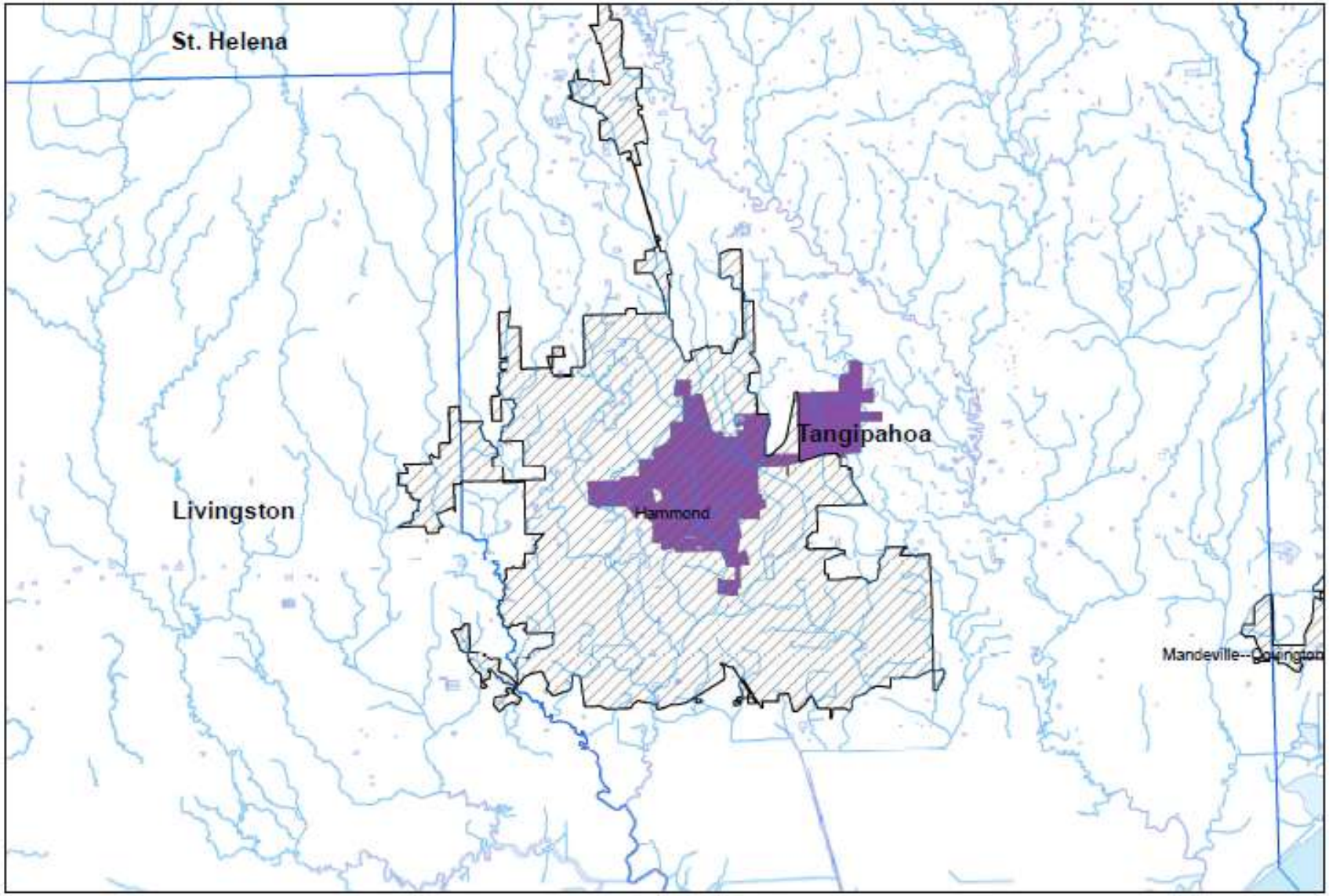

Louisiana MS4s – LDEQ
Designated and 2000
Urbanized Areas


2010 UA Areas –
USEPA Region VI
New MS4 Cities
Regulation Status
CSS Area
PHASE I
PHASE II
PHASE II - NEW UA 2010
Bossier City
Haughton
Greenwood
Grant
Rapides
Tickfaw
Independence
Tangipahoa
Hammond
St. Gabriel
Ponchatoula
Addis
Brusly
Albany
Plaquemine
St. Landry
New Iberia
Loreauville
Iberville
Tangipahoa
Port Vincent
Springfield
Orleans
St. John the Baptist
Napoleonville
Pinehurst
West Orange
Bridge City
Claiborne
Union
Morehouse
West Carroll
East Carroll
Yazoo
Madison
Warren
Scott
Leake
Bossier
Webster
Lincoln
Richland
Jackson
Bienville
Franklin
Caldwell
Tensas
De Soto
Red River
Winn
Simpson
Copiah
Jefferson
Catahoula
La Salle
Grant
Concordia
Adams
Franklin
Lincoln
Lawrence
Jefferson Davis
Covington
Wilkinson
Amite
Pike
Walthall
Marion
Lamar
Avoyelles
West Feliciana
East Feliciana
St. Helena
Washington
Pearl River
Jasper
Newton
Beauregard
Allen
Evangeline
Pointe Coupe
St Landry
Acadia
St. Martin
Jefferson Davis
Cameron
Vermilion
Assumption
St. Martin
St. James
St. Charles
St. John the Baptist
Jefferson
Lafourche
St. Mary
Iberia
Terrebonne
Plaquemines
Hancock
St. Bern

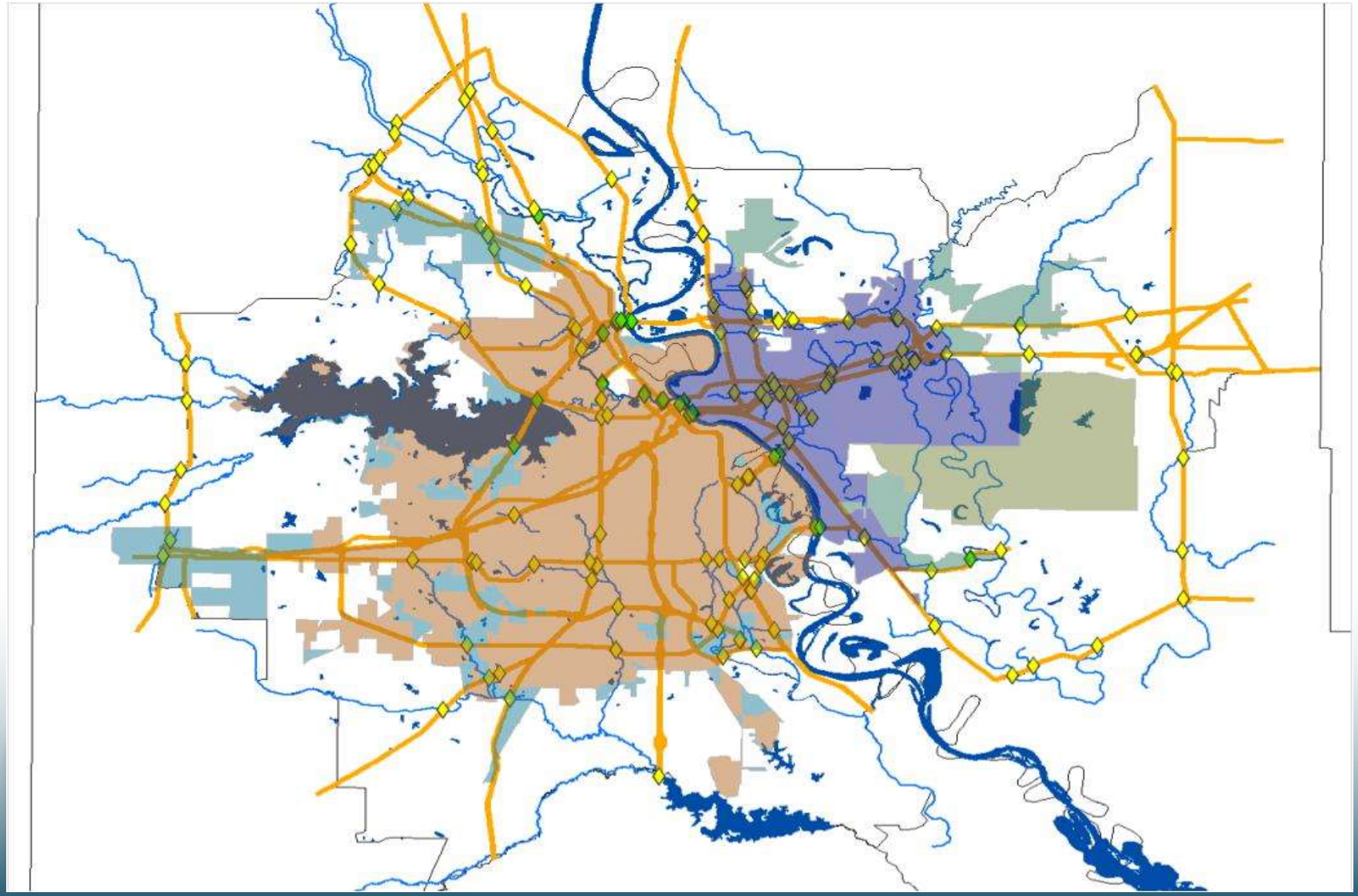
New MS4 Areas - Tangipahoa Parish



Legend

- Hammond City of - Municipal Separate Storm Sewer System MS4
- New MS4 Area (2010_Census_UAs)

Permitted MS4s within a Single Urbanized Area



LA MS4 Permittees

- Large and Medium MS4s (Individual Permit Coverage):
  - New Orleans, Baton Rouge, Shreveport, and Jefferson Parish
- Small MS4s:
  - Covered under the general permit, LAR040000
  - 44 MS4s have obtained coverage

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Basics of MS4 Permits

Permittees (i.e. cities, towns, parishes) must develop a Storm Water Management Plan with six minimum required elements (called Storm Water Control Measures):

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

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Note: Phase I permits include more specific requirements with regards to industrial discharges, monitoring, etc.

Basics of MS4 Permits

Both general and individual permits provide a "skeleton" of minimum requirements. Permittees should develop programs to meet those requirements, but tailor the programs to:

- To address specific water quality problems and pollutants in your area;
- To protect a significant water resource in your area (e.g., a public water supply, cold water fishery, etc.);
- To build upon existing municipal activities;
- To use an existing State or local program to meet one or more of the minimum measure requirements.
- To be more cost effective.

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Basics of MS4 Permits

- The permittee must develop measurable goals and milestones for each required element

- The municipality must develop appropriate ordinances or regulatory mechanisms to enforce storm water rules (particularly pertains to construction programs and illicit discharges)

- Annual Reports must be submitted to LDEQ

(New: Annual Report Templates on LDEQ website – Water Permits Division – LPDES Permits – Storm Water Information)

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What are Measurable Goals and what are they used for?

- Objective markers or milestones that you (and the permitting authority) will use to track the progress and effectiveness of your BMPs in reducing pollutants to the MEP

1. *Tracking implementation over time.*
2. *Measuring progress in implementing the BMP*.
3. *Tracking total numbers of BMPs implemented*.
4. *Tracking program/BMP effectiveness*.
5. *Tracking environmental improvement*.

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Steps to Select Minimum Measures and Measurable Goals

1. *Consider your objective for each minimum measure.*
2. *Review the programs (municipal or other) that are already in place for each minimum measure.*
3. *Select BMPs that complement each other and work toward meeting each minimum measure*

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Steps to Select Minimum Measures and Measurable Goals

4. *For each BMP, develop expeditious milestones for implementation.*

5. *Determine how you will evaluate the effectiveness of each BMP.*

6. *Derive measurable goals from the evaluation methods selected in Step 5.*

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SPECIFIC REQUIREMENTS

Related to the Six Minimum Control Measures

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1. Public Education and Outreach

Students learn about storm-water pollution (Source: City of Sacramento Stormwater Management Program, no date)

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1. Public Education and Outreach

- Develop and distribute brochures or fact sheets for general public and specific audiences
- Develop and distribute recreational guides to educate groups such as golfers, hikers, paddlers, climbers, fishermen, and campers
- Develop alternative information sources, such as web sites, bumper stickers, refrigerator magnets, posters for bus and subway stops, and restaurant placemats

For measurable goals, establish milestone dates for accomplishing each task, include numbers, percentages, etc.

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2. Public Participation

- Public Notice Storm Water Management Plans and Annual Reports

- Develop Volunteer monitoring groups, street clean-ups, etc.

- Organize a citizen's storm water council

- Include storm water as a topic at local council meetings

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3. Illicit Discharge Detection and Elimination

A "No Dumping" sign discourages illegal dumping by threatening arrest (Source: @Home WebSpace, Neuskool, 2000)

During large storm events sanitary sewers receive stormwater runoff in addition to wastewater, causing them to overflow (Source: USEPA, 2000)

- Respond to and track citizen's complaints
- Identify unusual discharges in the field
- Enforce local ordinances
- Minimize SSOs (sanitary sewer overflows)

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3. Illicit Discharge Detection and Elimination

- Locate problem areas for detailed screening using methods such as public complaints; visual screening; water sampling from manholes and outfalls during dry weather; and infrared and thermal photography
- Utilize LDEQ's data to identify industrial dischargers
- Train public employees to identify problems in the field
- Coordinate volunteers for locating outfalls
- Initiate recycling programs for commonly dumped wastes, such as motor oil, antifreeze, and pesticides.

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3. Illicit Discharge Detection and Elimination

Example Measurable Goals

1 year	Sewer system map completed; recycling program for household hazardous waste in place.
2 years	Ordinance in place; training for public employees completed; establish complaint hotline; begin dry weather screening program.
3 years	Outfalls screened ?x per year; percentage of complaints resolved; percentage of households participating in hazardous waste collection day.
4 years	Most illicit discharge sources detected and eliminated.

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4. Construction Storm Water Runoff

1. Develop an ordinance!
2. At a minimum, ensure requirements of the LPDES general permits are met.
3. Require erosion and sediment control best management practices (BMPs)
4. Review plans
5. Inspect and enforce!

BMP's are highly effective at minimizing pollution.

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4. Construction Storm Water Runoff

Target	Activity
1 year	Ordinance or other regulatory mechanism in place; procedures for information submitted by the public in place.
2 years	Procedures for site inspections implemented; establish percentage rate of compliance achieved by construction operators.
3-4 years	Maximum compliance with ordinance; improved water quality as demonstrated by wet weather screenings.

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5. Post-Construction Storm Water Management in New Development and Redevelopment

Develop a program, using an ordinance or other regulatory means, to address runoff from new development and redevelopment projects that disturb ≥ 1 acre

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5. Post-Construction Storm Water Management in New Development and Redevelopment

- Develop master plans, comprehensive plans, or zoning ordinances to guide the growth of your community away from sensitive areas and restrict certain types of growth to areas that can support it without compromising water quality.
- Establish site-based local controls such as buffer strip and riparian zone preservation, minimization of disturbance and imperviousness, and maximization of open space.
- Establish and maintain structural controls (detention ponds, infiltration systems, artificial wetlands, etc.).

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6. Pollution Prevention/Good Housekeeping

- MS4s are required to:
  - Develop a program to prevent or reduce pollutant runoff from municipal operations
  - Ensure municipal operations have obtained appropriate LPDES permits (e.g. Light Commercial, MSGP)
  - Include employee training to prevent and reduce storm water pollution from activities such as the maintenance of park and open spaces, buildings, and storm water systems

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6. Pollution Prevention/Good Housekeeping

- Establish maintenance activities and schedules for street sweeping, cleaning out storm drains, ditches, etc.
- Establish procedures for the proper disposal of waste removed from the separate storm sewer systems, including dredge spoil, accumulated sediments, floatables, and other debris.

Non-Traditional MS4s

- **Some stormwater program components may need to be modified or may not be applicable to non-traditional MS4s. For example:**
  - Many non-traditional MS4s do not review private construction plans like a municipality. The construction component would instead be focused on public construction projects
  - A public education program for a DOT may focus on employees or the traveling public
- **Non-traditional MS4s typically do not have ordinances or codes, and therefore, must use other methods to gain compliance**
  - A DOT may use right-of-way permit conditions to ensure BMPs are used at a business discharging into the DOT MS4

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Permitting Challenges

Four Words… **Total Maximum Daily Load** (TMDL)

- TMDLs are developed for watersheds that are impaired for specific pollutants/parameters
- May impose more stringent permit limits on point sources
- EPA requires that MS4s be addressed in TMDL development

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Permitting Challenges

- TMDLs are being developed/have recently been approved in heavily impacted areas –
  - East Baton Rouge, Livingston, Ascension Parishes (Bayou Manchac, Gray's Creek, Colyell Creek)
  - North shore of Lake Pontchartrain (Tchefuncte, Bayou Liberty)
  - TMDLs include allocations for MS4s
    - ➢ No permit limits, but permittees must address TMDL through BMPs and monitoring
    - ➢ TMDLs non-specific; EPA requires more targeted BMPs in the permits

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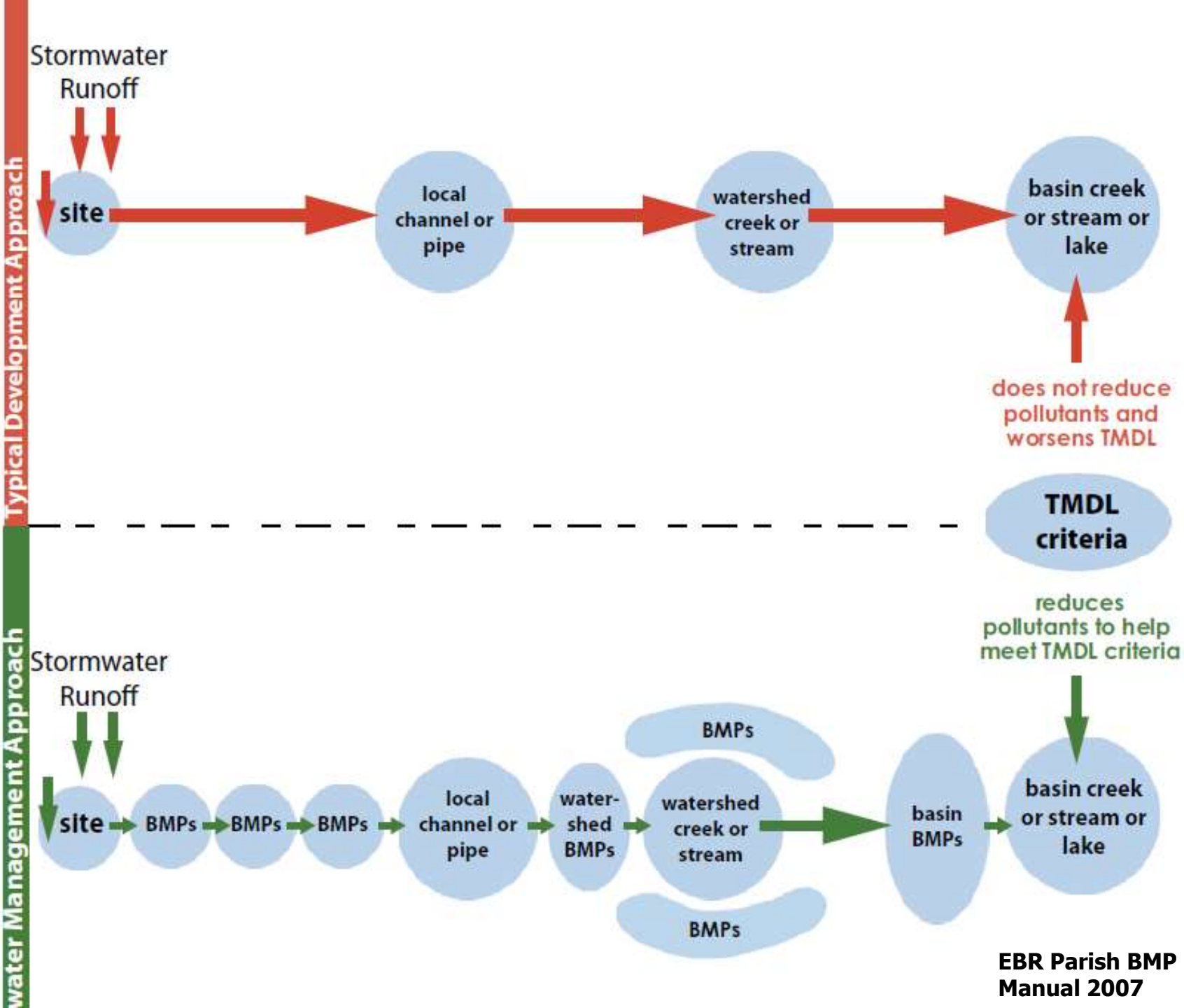

EBR Parish BMP Manual 2007

LAR040000 Reissuance

- Reissued Feb. 13, 2013; effective March 1, 2013
- All currently permitted small MS4s are required to reapply
  - NOIs will be public noticed prior to LDEQ authorizing coverage under the general permit
  - Current permittees will continue to operate under the expired permit until authorization is granted under the new permit

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LAR0040000 Reissuance

- TMDL and Monitoring requirements clarified
  - Must select and implement control measures to specifically address TMDL WLAs
  - Must design and implement a monitoring program to evaluate effectiveness of selected control measures
- Deadlines included for establishing legal authority (i.e. ordinances)

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Reissuance - Monitoring

- MS4s with a WLA must conduct some monitoring to determine the effectiveness of storm water control measures
- Monitoring does not necessarily refer to laboratory-analyzed samples only
- Regular visual inspections of outfalls are acceptable!
- Some storm water samples may be taken to establish overall load coming from the MS4

  (BOD, COD, TSS, possibly nutrients)
- Frequencies and types of monitoring are established by the MS4 permittee, <u>but must be justified</u>

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LAR040000 Reissuance

Other changes:

- Targeted BMPs established for MS4s with waste load allocations (e.g. BMPs focusing on reduction of bacteria in storm water)
- MS4s must determine pollutant sources of impaired waters (without a TMDL)
- Newly designated MS4s (as designated by the 2012 UA delineations) must apply for coverage or a waiver
- Legal Authority requirements

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Large Construction GP Upcoming Changes

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Why is LDEQ's CG Permit Important?

As a component of an MS4's Construction SW Program, you must ensure developers in your area are in compliance with state issued permits.

You are responsible for providing information and guidance to developers in your jurisdiction.

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Contractors, Developers, etc. must submit a Notice of Intent for coverage under this permit for any activity that will:

1) that disturb 5 acres or more (e.g. a new school, commercial property, hospital, etc.)

2) disturb less than 5 acres, but are part of a larger common plan of development (e.g. a single home inside a large subdivision)

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LDEQ's current permit expires September 30, 2014. The following **MAJOR** changes in the permitting process will be implemented:

1. Permit applicants must select a predetermined time frame (1-5 years)
2. Based on this time frame the annual permit fees must be paid at the time the NOI is submitted:

   1 Year = $ 264

   2 Years = $ 528

   3 Years = $ 792…

There will be no increase in fees, just a change in when and how they are paid.

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3. The termination date of the permit authorization is pre-determined based on the number of years selected by the applicant.
4. If more time is needed, a Notice of Extension may be filed with additional annual fees.
5. No more Notices of Termination!!!
6. Currently permitted operators will be reauthorized under the new permit for ONE year.
7. Operators that have outstanding (unpaid) annual fees will have their permits terminated upon expiration of the general permit.

Helpful Websites

- EPA MS4 Page: http://cfpub.epa.gov/npdes/stormwater/munic.cfm
- SWPPP for Construction Activities: www.epa.gov/npdes/swpppguide
- Model Ordinances: www.epa.gov/owow/nps/ordinance/
- EPA Stormwater Program: www.epa.gov/npdes/stormwater
- **LDEQ website: www.deq.louisiana.gov**

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Questions?

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