Nonpoint Source

PROGRAM

Louisiana Nonpoint Source Annual Report

Federal Fiscal Year (FFY) 2015

DEQ LOUISIANA

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1.0 Executive Summary

2015 Louisiana Nonpoint Source Annual Report

1.0 Executive Summary

The State of Louisiana's federal fiscal year (FFY) 2015 Nonpoint Source (NPS) Annual Report has been prepared in compliance with Section 319 of the Clean Water Act (CWA). This report outlines progress made by the State of Louisiana in protecting and restoring waterbodies impacted by NPS pollution. Sources of NPS pollution include agricultural production, forestry, sand and gravel mining, urban storm water runoff, construction, and individual home sewerage systems. The NPS program in Louisiana is administered by the Louisiana Department of Environmental Quality (LDEQ), but partners with Louisiana Department of Agriculture and Forestry (LDAF) and many other agencies and organizations on NPS activities, such as estiblishing statewide water quality goals, prioritizing of watershed planning and implementation activities, evaluating progress, and reporting program activities.

LDEQ, LDAF and United States Department of Agriculture – National Resources Conservation Service (USDA-NRCS) continue to work together to improve the process of restoring and protecting watersheds. Great strides were made to improve the priority watershed selection process to ensure success. A pilot project is under way to test and document the new process currently in place. LDEQ is working with U.S. Environmental Protection Agency Region 6 (USEPA R6) to develop a format for Strategic Assessment Plans (SAPs) and Watershed Implementation Plans (WIPs).

NPS Program Highlights

- NPS staff attended 12 outreach and educational events;
- 305 watershed signs were purchased and distributed across the state;
- 217,081 pounds of nitrogen, 79,803 pounds of phosphorus and 29,836 tons of sediments were reduced through agricultural best management practices (BMPs) implementation;
- Three (3) success stories were approved by the USEPA as qualifying for three (3) WQ-10 measures;
- LDEQ and LDAF applied for and was granted a total of $3,697,000 federal dollars in the FFY 2014 work plan;
- LDEQ/LDAF NPS staff attended Spreadsheet Tool for Estimating Pollutant Load (STEPL) modeling, NRCS Soil Health, NRCS Revised Universal Soil Loss Equation (RUSLE) 2 and Wildland Hydrology's Applied Fluvial Geomorphology training;
- LDEQ, LDAF and USDA-NRCS continues partnering in watersheds prioritized through USDA's Mississippi River Basin Initiative (MRBI)/National Water Quality Initiative (NWQI)/Gulf of Mexico Initiative (GoMI);
- LDEQ Water Surveys (WS) staff continues to provide water quality sampling to LDEQ NPS program;

  LDEQ's NPS and Assessment staff worked together on the New Vision Initiative;
- LDEQ and the Louisiana Aquatic Litter Alliance developed a model litter ordinance for Louisiana local governments and have started a campaign encouraging local governments to consider adopting it or updating their current plans;
- LDEQ continued watershed planning and implementation activities with three (3) watershed coordinators (WSCs);
- Louisiana continues to focus on watershed planning, assessment, monitoring and implementation in 29 watersheds;

- In partnership with Louisiana Department of Natural Resources (LDNR), LDEQ responded to comments from USEPA and National Oceanographic and Atmospheric Administration (NOAA) on Louisiana's Coastal Nonpoint Pollution Control Program (CNPCP);
- LDEQ's Drinking Water Protection (DWP) program implemented activities in Allen, Avoyelles, Caldwell, Evangeline, Ouachita, Sabine, St. Martin and St. Mary parishes;
- LDEQ is working towards a partnership with Louisiana Rural Water Association (LRWA) to develop and present homeowner sewage maintenance educational workshops across the state;
- LDEQ reviewed 188 Solicitation of Views to ensure NPS compliance issues were addressed;
- LDEQ published monitoring data in USEPA's Storage and Retrieval (STORET) Data Warehouse for 15 watersheds;
- Through a one (1) year pesticide sampling work plan, 41 impairments in 32 subsegments for five (5) legacy pesticides (Carbofuran, DDT, Fipronil, Methoxychlor, and Toxaphene) no longer used in Louisiana were removed from the Clean Water Act (CWA) Section 303(d) list of impaired waters;
- LDEQ developed maps using the Watershed Delineator from the ArcGIS Soil and Water Assessment Tool (ArcSWAT) for 14 watersheds to assist in watershed planning, implementation, and monitoring;
- LDEQ published 189 maps in support of NPS projects;
- USPEA approved one SAP, the Bayou Mallet SAP.

1.1 NPS Outreach and Education Activities

LDEQ attended 12 outreach and educational events this fiscal year spanning the entire state. These events included educational endeavors for adults to hands-on demonstrations to children of all ages. LDEQ uses educational interactive models such as Enviroscape and Walnut Bayou. The Enviroscape model allows for students to visually experience how water is transported through an array of landscapes, from urban to agricultural, illustrating the interconnectedness of our waterways and the transportation of NPS pollution. Walnut Bayou, is a model created in house used to explain the movement of water and the corresponding geomorphological alterations resulting from this movement. In demonstrating these models, students are asked to think about and predict how the water moves through various substrates and how that affects the transportation of NPS pollution. In FFY 2015, LDEQ reached more than 21,000 adults and students through the following events and expos.

October 18, 2014

Wild Things, is the annual open house for the Southeast Louisiana National Wildlife Refuges and hosted by the U.S. Fish and Wildlife Service (USFWS). Attendees experienced the wild resources of the area and learned how they can get involved helping to preserve the public lands. This event was attended by approximately 5,500 visitors. It included a Youth Wildlife Art Show with over 400 entries on display and over 40 Wildlife & Conservation Exhibitors.

October 28, 2014

Ocean Commotion, was hosted by the Louisiana Sea Grant College program, this event gave students the opportunity to learn about the aquatic ecosystems Louisiana's citizens are so dependent upon. This event is attended by approximately 2,500 K- 8th grade students from around the state. There were over 60 exhibitors' present, representing vital aspects of Louisiana's ecosystems.

February 23, 2015

Copper Mill Elementary School , LDEQ Environmental Scientists visited Copper Mill Elementary School in Zachary to teach two (2) classes of Gifted 5th and 6th Grade students about water quality. A presentation about the hydrosphere and a hands-on interactive demonstration of the "Walnut Bayou" model was presented. Approximately 40 students learned about water quality.

February 23, 2015

Friendship Capital High School, LDEQ Staff participated in Friendship Capitol High School's Family Math and Science Night. The students received a hands-on interactive demonstration of the Enviroscape model. Approximately 50 students received information about NPS water pollution.

February 27-28, 2015

The Louisiana Environmental Education Symposium was held in Shreveport. It is a two (2)-day professional development event hosted each year by the Louisiana Environmental Education Commission and the Louisiana Environmental Education Association and was attended by approximately 100 adults. The symposium is an environment in which professionals are taught to support and promote environmental education through facilitating communication, coordination and professional development among an array of environmental education programs throughout the state.

March 14, 2015

Envirothon is a yearly hands-on environmental problem-solving competition for high school-aged students in the United States and Canada. It is North Americas' largest high school environmental education competition. This year's competition was held at the Burden Center in Baton Rouge. LDEQ staff assisted with the event, which involved approximately 75 kids and adults.

Figure 1. Rhyshima Parms-Green, DEQ environmental scientist in the Nonpoint Source Pollution Group, and helper, A'Brianna Francois, demonstrate the Enviroscape model at DEQ's booth during Earth Day.

April 19, 2015

Louisiana Earth Day is an annual event that is held in Baton Rouge. It is one of the largest community-based Earth Day events in the country. One of the purposes of this event was to educate the community about the importance of environmental issues in Louisiana and the idea that each individual can make a difference. This event had approximately 1200 attendees.

April 23, 2015

Wetland Watchers Annual Wetlands Celebration was held in Norco at Wetland Watchers Park on the Bonnet Carre´ Spillway. More than 1,000 people attended the event, which informed participants about preserving and conserving the wetlands. More than 20 interactive stations were featured.

April 23-24, 2015

Sparta Water Fest is an event in which fifth grade students were given the opportunity to explain reasons why water conservation is important and were asked to brainstorm alternative methods to effectively conserve water in a domestic setting. Students participated in a number of games such as water relay, demonstrating the amount of water used daily by average Americans and role playing exercises, observing the right of capture law versus equal quantity law by playing the parts of city dwellers and farmers. The event also offered a number of lectures and demonstrations that linked the actions of the home and yard to water quality.

April 24, 2015

Earth and Science Day was held at Pontchartrain Elementary School in Mandeville. The purpose of this event was to offer students hands-on experiences in the areas of nature and science. LDEQ staff attended the event and demonstrated the Enviroscape model for approximately 150 students and adults.

Figure 2. Linda Hardy (left) and Marissa Jimenez (right), DEQ environmental scientists, demonstrate the Enviroscape model at the Pontchartrain Earth and Science Day.

May 12, 2015

Jefferson Beautification Earth Day Education Fair was held in Metairie at LaSalle Park and was attended by more than 300 fifth-grade students from six (6) Jefferson Parish elementary schools. This event promoted tree planting and beautification through education and public awareness.

September 26, 2015

National Hunting & Fishing Day is an annual event that is held at the Waddill Wildlife Center in Baton Rouge hosted by the Louisiana Department of Wildlife and Fisheries (LDWF). This is a national event celebrated by all 50 states. This event introduces youth to outdoor activities so they will become responsible future hunters and anglers and is hosted in four (4) locations throughout the state with more than 10,000 people attending statewide.

2.0 Water Quality Improvements

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2.0 Water Quality Improvement

Louisiana's Progress on WQ-09 (a-c) and WQ-10

Louisiana's NPS Program has made significant progress in partially or fully restoring NPS impaired watersheds. Louisiana's NPS Management Plan milestones include USEPA water quality measures WQ-09(a-c) and WQ-10 for water quality improvements. Measure WQ-09 (a-c) requests states to report on estimated annual reductions in nitrogen, phosphorus and sediment from NPS to the state's watersheds. During FFY 2015, LDAF reported 217,081 pounds of nitrogen [1], 79,803 pounds of phosphorus [1] and 29,836 tons of sediment[1] were reduced through the implementation of agricultural BMPs in the Ouachita River, Mermentau River, and Vermilion-Teche Basins.

Measure WQ-10 requests states to report on the number of watersheds identified in 2000 or subsequent years, primarily impaired by NPS pollutants that have been partially or fully restored. Louisiana reviews related activities for each watershed impaired with NPS pollutants that has been delisted. All watersheds restored by 319 funds or other funding sources are counted for this measure. Three (3) success stories (Bayou Plaquemine Brule, Yellow Water River, and Turkey Creek) were written and submitted to USEPA Headquarters in Washington D.C. for approval. Yellow Water River and Turkey Creek success stories are published on USEPA's NPS Success Story Website at **http://www.epa.gov/owow/nps/Success319/**. Bayou Plaquemine Brule did not qualify as a success story due to publication of a previous success story for fecal coliform; therefore, it was approved, but not published.

2.1 Success Stories

Yellow Water River

Sewage leaking from improperly managed septic systems led to fecal coliform bacteria impairments in the Yellow Water River. Beginning in 2007, LDEQ contracted with the Lake Ponchartrain Basin Foundation (LPBF) to implement a series of initiatives such as pollution source tracking, education and intensive water quality monitoring. As a result of these initiatives, LDEQ removed the waterbody's Secondary Contact Recreation (SCR) bacteria impairment listing from the 2012 Integrated Report (IR).

Turkey Creek

In an effort to restore the fish and wildlife propagation designated use to Turkey Creek (Subsegment 080906) the high concentrations of total dissolved solids (TDS) were reduced by implementing comprehensive resource management system (RMS) plans. By specifically targeting agricultural fields, the NRCS along with the producers and landowners were able to reduce the pollutant loads within the Turkey Creek watershed. As a result, the TDS impairment for Subsegment 080906 was removed in 2010.

Bayou Plaquemine Brule

Beginning in 2004, Bayou Plaquemine Brule was listed as impaired for TDS. Beginning in 2005, BMPs were implemented by LDAF. These BMPs included conservation crop rotation, grade stabilization structures, residue management, shallow water management for wildlife, and irrigation land leveling. As a result of this effort, in 2008, Bayou Plaquemine Brule (Subsegment 050201) was delisted for TDS.

[1] *STEPL model estimated nitrogen and phosphorus loading based upon BMPs implemented and tons of sedimentation reported.*

3.0 NPS Funding

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3.0 NPS Funding

Louisiana's NPS program receives funding through CWA Section 319, which is prioritized to fund projects in coordination with USDA's Farm Bill, to implement its water quality goals and objectives. LDEQ continued partnering with WSCs in developing WIPs and LDAF and USDA-NRCS in implementing WIPs for NPS pollution impaired priority watersheds.

In FFY2015, water quality monitoring continued in 17 watersheds. The data collected assists LDEQ and its partners in making valuable decisions. Pre-BMP monitoring assists in identifying critical areas contributing NPS pollutant loads in order to select the appropriate types of BMPs needed in the most suitable locations. Post-BMP monitoring assists LDEQ and partners in determining if BMPs implemented are effective.

Watershed	Subsegment	River Basin
Bayou Lafourche	020401	Barataria
Comite River	040103	Pontchartrain
Natalbany River	040503	
Big Creek – South (NWQI)	040703	
Bayou Mallet	050103	Mermentau
Bayou Plaquemine Brule	050201	
Bayou Queue de Tortue (GoMI)	050501	
Bayou Lacassine (MRBI)	050601	
Bayou Chene (MRBI)	050603	
Boston Canal	060910	Vermilion-Teche
Tunica Bayou	070505	Mississippi
Bayou Louis/Lake Louis	080202/080203	Ouachita
Bayou Lafourche (MRBI)	080904	
Turkey Creek (MRBI)	080905/080906	
Lake St. Joseph	081202	
Bayou Folse	120305	Terrebonne
Upper Bayou Terrebonne	120301	

Table 1. Watersheds in which water quality monitoring was conducted in FFY2015.

LDEQ's NPS staff and WSCs developed the WIP below. WIPs developed for other priority watersheds are updated annually as water quality data become available and projects identified in the plan are implemented.

Watershed	Subsegment	Basin
Tunica Bayou WIP	070505	Mississippi River

Table 2. WIP developed by WSCs

ED_001135A_00009328 EPA_009573

In FFY2015, LDEQ staff worked with USEPA R6 in developing a SAP format. The following SAPs and WIPs were updated/developed for USEPA R6 review:

Watershed	Subsegment	River Basin
Hemphill Creek SAP	081609	Ouachita
Big Creek (Northeast) SAP	080903	Ouachita

Table 3. SAPs developed by LDEQ staff in FFY2015

In FFY 2016, LDEQ-NPS will be submitting the following SAPs and WIPs to USEPA R6 for review:

Watershed	Subsegment	River Basin
Tunica Bayou SAP	070505	Mississippi
Bayou des Cannes SAP	050101	Mermentau
Lake Fausse SAP	060702	Vermilion-Teche
Bayou Folse SAP	120302/120305	Terrebonne
Indian Bayou SAP	030805	Calcasieu
Bayou Vermilion District SAP	Special Project	Vermilion-Teche
Middle Comite River SAP	040102	Lake Pontchartrain
Bayou Chene WIP	050603	Mermentau
Bayou Lafourche WIP	080904	Ouachita
Comite River WIP	040103	Lake Pontchartrain
Bayou Louis/Lake Louis /WIP	080202/080203	Ouachita

Table 4. SAPs and WIPs to be developed/submitted in FFY 2016

LDAF provided technical assistance and BMP implementation on 42,781.23 acres in 10 watersheds, see below.

Watershed	Acres Implemented	LDAF (Federal)
Natalbany River	95	Pontchartrain
Bayou Queue de Tortue	5,827.80	Mermentau River
Bayou Des Cannes	4,375.30	Mermentau River
Bayou Chene	2,284.13	Mermentau River
Boston Canal	1,832.80	Vermilion Teche
Bayou Plaquemine Brule	7,361.90	Mermentau River
Lake St. Joseph	5,191.30	Ouachita River
Big Creek (South)	2,812	Pontchartrain
Bayou Louis/Lake Louis	1,024.40	Ouachita River
Bayou Lafourche	11,976.60	Ouachita River
TOTAL	**42,781.23**	

Table 5: Acres of BMPs implemented by LDAF in various watersheds

LDEQ expended approximately $1.89 million in CWA Section 319 funds for NPS and Source Water Protection, watershed coordination and NPS monitoring and implementation projects to protect and/or restore recreational waters and drinking water supplies. LDAF expended approximately $1,974,521.36 on watershed implementation within multiple watersheds around the state. The table below provides a description of Section 319 grant expenditures during FFY2015.

Grant Year	LDEQ (Federal)	LDAF (Federal)
2010	$203,109.58	$511,165.39
2011	$199,017.02	$372,996.17
2011 MRBI	$272,959.09	--
2012	$118,165.81	$740,436.68
2013	$540,196.03	$277,744.39
2014	$565,976.49	$47,694.72
2014 Special Award	--	$24,214.01
TOTAL	**$1,899,423.90**	**$1,974,521.36**

Table 6: Description of Section 319 Grant Expenditures

4.0 Training

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4.0 Training

Grants Reporting and Tracking System (GRTS) Training (December 2014)

LDEQ staff was presented an update by the LDEQ staff that attended the 2014 GRTS Conference in Seattle.

Agriculture BMP Training for Louisiana Farming (February and May 2015)

LDAF and LDEQ staff participated in a two (2)-day workshop. Each presentation included a picture, description and cost of the practice. A total of 44 practices were presented and discussed.

NRCS Soil Health Workshop (April 2015)

Attended by LDEQ, LDAF and Brad Lamb & Sylvia Ritzky (USEPA R6 program oversight managers to Louisiana) in New Roads. Topics of discussion included rainfall simulator and soil health demonstrations, understanding agroecology principles for improving soil health, forage and pasture management research, conservation tillage and cover crop research, and a Louisiana Producers panel discussion of cropland and pastureland.

Strategic Assessment Plan (SAP) Training (May 2015)

A coordinated effort between USEPA R6 and LDEQ resulted in establishing a SAP format. The SAP is the foundational document for Louisiana's new process of strategically targeting NPS within its watersheds. During this training LDEQ NPS staff was presented the general format along with the information required for each of the sections. The SAP is used to establish the current water quality conditions of the waterbody, along with defining the proposed path forward for the project. The baseline sampling regime, a description of the farm plan selection process, the various planning stages, proposed BMP implementation, anticipated post-BMP monitoring regime, historical data analysis, reporting schedules, the interactive components of the educational and outreach activities, known partnerships and their roles, and a proposed project timeline of the assessment, monitoring, and restoration activities for the waterbody are described in their corresponding sections. This document serves as a living record of the current and proposed activities within each waterbody. .

NRCS Revised Universal Soil Loss Equation (RUSLE 2) Workshop (June 2015)

LDEQ and LDAF staff attended a one (1) day workshop conducted by the Louisiana State Conservation Agronomist, Chris Coreil. Discussed were the basics of running the RUSLE 2 model to predict rill and interill erosion by rainfall and runoff and BMP efficiency rates.

National Hydrography Dataset (NHD) Training (July 2015)

An internal training was presented to the staff to help them gain an understanding of the general concept of NHD, the status of data in Louisiana, and current and future uses for the data at LDEQ.

USDA, National Agricultural Statistics Service, 2014 Louisiana Cropland Data Layer (CDL) Workshop (July 2015)

Presented to LDEQ staff to gain an understanding of the appropriate protocol in utilizing this layer to create land use maps using a simplified process.

Wildland Hydrology's Applied Fluvial Geomorphology course (October 26 – 30, 2015)

Presented to LDEQ and LDAF personnel to teach them the principals of fluvial geomorphology, sedimentation, hydraulics, fish habitat improvement, riparian grazing management and stream bank erosion. These are essential factors in the field data collection process, which are crucial for representative site selection.

5.0 Coordination With Partners

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5.0 Coordination with Partners

5.1 USDA-NRCS Initiatives

During FFY2015, LDEQ, LDAF and USDA-NRCS continued partnering in watersheds prioritized through USDA's MRBI, GoMI and NWQI (see Tables 7-10). Through the USDA Farm Bill and 319 funds USDA and LDAF worked with land owners and producers to implement agriculture BMPs through cost–share agreements. LDEQ utilizes 319 funds to fund several contracts for monitoring and assistance from LDEQ WS to provide watershed assessment and characterization, pre-BMP sampling to collect baseline data and determine critical areas for BMP implementation and post-BMP sampling to monitor water quality changes as a rsult of BMP implementation.

Mississippi River Basin Initiative (MRBI)

FFY2011 FFY2015

LDEQ has completed long-term sampling on the first MRBI's in Louisiana. These projects included a baseline study, BMP targeted implementation and long-term monitoring to determine the success of the BMPs implemented. The final reports are currently in review.

Watershed	Subsegment	River Basin	12-Digit HUC Name	12-Digit HUC
Bayou Lafourche	080904	Ouachita	Crew Lake	080500011304
			Steep Bayou	080500011308
			Halfway Bayou	080500011401
Turkey Creek	080906	Ouachita	Turkey Creek	080500011007
			Little Turkey Creek	080500011502
			West Turkey Creek	080500011503
			Turkey Creek Lake	080500011504
Bayou Chene	050603	Mermentau	Bayou Chene	080802020205
Bayou Lacassine	050601	Mermentau	East Bayou Lacassine	080802020202
			West Bayou Lacassine	080802020204
			Thornwell Drainage Canal	080802020206
FFY2015, all four (4) projects have ended. Final reports are currently in review. Bayou Chene project has been extended with BMPs being funded through LDAF Section 319 funding.				

Table 7. USDA – FFY2011-2015 Mississippi River Basin Initiative

FFY2016

Louisiana's firstMRBI projects come to an end and six (6) new MRBI projects were chosen in FFY2015. Projects will begin in FFY2016. These projects will receive USDA Farm Bill funding over a three (3) year life span totaling $3,689,966. These MRBI watersheds are located in the northeastern part of the state within the Ouachita River Basin, which as a priority area in the Louisiana Nutrient Management Strategy.

The overall goals of the MRBI include reducing fall tillage and keeping the soil covered by increasing the use of cover crops and/or increasing residue to reduce soil loss. NRCS will assist producers to improve

nutrient management techniques above their current level to increase nutrient utilization. NRCS, Soil and Water Conservation Districts (SWCD) and other partners will develop targeted outreach plans to reach every producer within the watershed. Conservation planning and technical assistance will be offered at no charge to help producers address the watershed goals and improve water quality.

Watershed	Subsegment	Acres	Parish	12-Digit HUC Name	12-Digit HUC
Bayou Macon	081001	21,058	West Carroll	Alligator Bayou	080500020503
Big Creek	080903	22,030	Richland	Little Creek	080500011001
Lake Providence	081101	34,953	East Carroll	Lake Providence – Tensas Bayou	080500030101
Tensas River[1]	081201				
Tensas River	081201	51,777	Tensas	Lake Bruin	080500030503
Lake Bruin	081203			Van Buren Bayou	080500030501
Tensas River	081201	28,952	Madison	Little Tensas Bayou – Bull Bayou	080500030105
Deer Creek	081003	26,671	Franklin	Upper Deer Creek	080500011601

Table 8. USDA - FFY 2016 Mississippi River Basin Initiative

[1] The Louisiana Legislature just passed a law forming the Lake Providence Watershed Council. This council will be made up of local and state representatives and the legislation names USDA-NRCS as the federal partner for implementation. The council will develop a plan for restoration of the lake by May of 2016.

National Water Quality Initiative (NWQI)

Watershed	Subsegment	River Basin	12-Digit HUC Name	12-Digit HUC
Big Creek	040703	Pontchartrain	East Fork Big Creek	080702050202
			Big Creek	080702050203
Bayou Louis & Lake Louis	080202/ 080203	Ouachita	Bayou Louis	080402070303
			Black Bayou	080402070302
Bayou Queue de Tortue	050501	Mermentau	Indian Bayou	080802020101

FFY 2012, USEPA provided CWA Section 319 funds to LDAF to implement BMPs and LDEQ to evaluate the effectiveness of BMPs in reducing sediment, nutrients and bacteria through NWQI in Big Creek and Bayou Louis/Lake Louis.

FFY 2013, Quality Assurance Project Plan (QAPP) was approved and sampling initiated in Big Creek on August 13, 2013. QAPP for Bayou Louis/Lake Louis has been developed and approval anticipated in early 2014.

FFY 2014, Rapid assessment ended on Big Creek and LDEQ, LDAF and USDA-NRCS chose long term sampling sites to continue sampling the effectiveness of the BMPs. A sample plan for Bayou Louis/Lake Louis was approved in April 2014. The rapid assessment for Bayou Louis/Lake Louis started in May of 2014.

FFY2015, Long term sampling continues in Big Creek. Rapid assessment ended on Bayou Louis/Lake Louis and LDEQ, LDAF and USDA-NRCS chose long term sampling sites. Long term sampling began in Bayou Queue de Tortue.

Table 9. USDA - National Water Quality Initiative

Gulf of Mexico Initiative (GOMI)

Watershed	Subsegment	River Basin	12-Digit HUC Name	12-Digit HUC
Bayou Queue de Tortue	050501	Mermentau	Bayou Grand Marais	080802020103
			Lyons Point Gully	080802020104
			Indian Bayou	080802020101
			Lazy Point Gully	080802020105
Grand Bayou and Little Grand Bayou	120206	Terrebonne	Bayou Corne	080903020302
			Bayou St. Vincent	080903020304

FFY 2012, USEPA provided Section 319 funds to LDAF for Bayou Queue de Tortue to implement BMPs and LDEQ to evaluate effectiveness of BMPs in reducing sediment and nutrients through GoMI in Bayou Queue de Tortue and Grand Bayou/Little Grand Bayou.

FFY 2013, QAPP for Bayou Queue de Tortue has been approved on March 20, 2013 and sampling initiated on July 24, 2013. Grand Bayou/Little Grand Bayou assessments confirm a highly hydromodified watershed that will be difficult to restore due to excessive pumps. Another watershed within the basin is being considered.

FFY 2014, Rapid assessment ended on Bayou Queue de Tortue and LDEQ, LDAF and USDA-NRCS chose long term sampling sites to continue sampling the effectiveness of the BMPs.

FFY 2015, Long term sampling continues in Bayou Queue de Tortue and additional sites were added to the Bayou Grand Marais Hydrologic Unit Code (HUC) to monitor USDA-NRCS efforts.

Table 10. USDA - Gulf of Mexico Initiative

5.2 Lake Fausse Pointe Project Pilot Study

Lake Fausse Pointe encompasses 16,832 acres in the Vermillion-Teche River basin. According to the 2014 IR, Lake Fausse Pointe is not supporting its designated use of fish and wildlife propagation due to high concentrations of turbidity. The suspected source of the impairment is unknown; however, in 2014 the Lake Fausse Pointe, Dauterive Lake and Grand Avoille Cove Advisory Board had a sedimentation study completed in an attempt to identify potential sources of sedimentation into the lake. The conclusions of that report revealed that there are inputs into the lake that come from the North and West; however the study only included five (5) sampling events and four (4) sampling sites. The report recommends completing a more in depth study of the lake to determine where the sedimentation is coming from and how it can be addressed. This is where LDEQ steps in.

LDEQ selected sites in FFY2015 to begin a baseline study. This study will aid in identifying sites with the highest turbidity input into the lake, establish the current water quality conditions of the lake, and aid in determining if there is a geographical or temporal component to the impairment within the lake. This sampling is set to begin in January 2016.

Once a baseline has been established and critical areas with high turbidity input into the lake are identified. LDEQ will complete another baseline study to locate critical areas within the tributaries for our partners, LDAF and USDA-NRCS, to focus targeted BMPs.

The objectives are to:

A) Identify the areas with highest turbidity loading into the lake with a baseline study in 2016; and

B) Begin reducing the turbidity loadings entering the lake in 2017 by focusing BMPs in the geographically referenced critical areas identifiedby the baseline.

This project is unique in scope as for the first time, from beginning to end; it will follow LDEQ's NPS sections new process to restore waterbodies by strategically targeting NPS. This project involves numerous stakeholders and partners all working together for a common goal. Information gathered through this project will be used by the stakeholders to reduce sedimentation within the lake and aid in restoring water quality not only to Lake Fausse Pointe, but the surrounding areas.

5.3 LDEQ/LDAF/USDA-NRCS Plan for Success

LDEQ, LDAF and USDA-NRCS, have further refined their collaborative process (see Table 11) in an effort to be more efficient and effective in restoring watersheds in Louisiana. In FFY2015, the Lake Fausse Pointe project was chosen as a pilot project for the new process. LDEQ, LDAF and USDA-NRCS partnership will continue to meet on a quarterly basis or more frequently as needed to discuss the WS staff's findings and make management decisions based on those findings.

Planning For Success
Priority Watershed Selection Process ● Assess subsegments on Louisiana's Integrated Report. ● Eliminate subsegments with no NPS impairments. ● Extract subsegments with ambient sites recently sampled. ● Pull out subsegments with heavy agricultural land use. ● Review existing ambient data to finalizethe list. ● Interim list goes to partners for input to eliminate and rank by landowner participation. ● Partnership collaboratively decides on finalpriority watershed list.
Agriculture Assessment ● Conducted by District Conservation staff. ● Results: - Not a good choice, it is removed from the list. - A good choice, a water quality assessment is conducted.
Strategic Assessment Plan ● Written by partners and stakeholders and includes: - Identificationof potential causes and sources. - Defineswater quality goals. - Provides explanation for proposed project. - Timeline of tasks and milestones. - Describes and explains potential management measures. - Allows for the development of water quality component. - Allows for placement of water quality monitoring sites within a watershed.

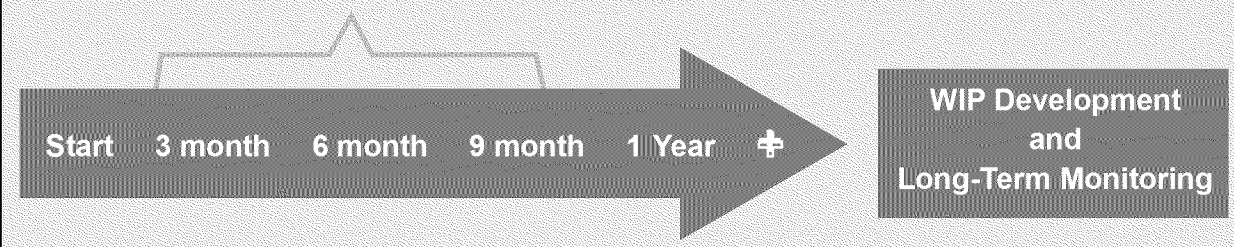
Water Quality Assessment/Characterization

- Conducted by LDEQ WS staff.
- Includes a watershed characterization, hydrology study and RWQA site selection
- Results:
  - Not a good choice, it is removed from the list.
  - A good choice, start RWQA

Rapid Water Quality Assessment (RWQA)

- Sites are based on water quality assessment findings.
- 25 – 30 sample sites analyzed using fieldkits.
- Lasting one (1) year or as needed.
- REAL TIME baseline.
- Determines critical areas.
- Keep stakeholders informed.
- Determine where BMPs need to be focused.

Quarterly Assessment with Partners



Foundation for Designing the WIP:

- Complete Watershed Characterization.
- Provides REAL TIME baseline.
- IdentifiesCritical Areas.
- Directs Placement of BMPs.
- Aids in Determining Long-Term Monitoring Sites.

Bridging the Strategic Assessment Plan (SAP) into the Watershed Implementation Plan (WIP)

Conservation Practices (BMPs)

NRCS BMPs and Innovations focused on critical areas determined by the SAP
1st LDAF and USDA-NRCS engage focused participants in public outreach, sign-ups and resources inventory.
2nd Applications are ranked by critical areas.
3rd Contracts are developed and partnerships begin

Long Term Water Quality Assessment

- Focused sampling on critical areas.
- Analyzed using lab analysis.
- Reduce the number of samples in the non-critical areas.
- Monitor 2-3 years the effectiveness of the BMPs implemented.

Water Quality Restoration

A success story is written to document success and published on USEPA's website.

Table 11. LDEQ, LDAF and USDA-NRCS Plan for Success

5.4 Louisiana Nutrient Management Strategy Update

Nutrient impacts and eutrophication are a nationwide water quality concern. Many entities, including the Mississippi River Gulf of Mexico Watershed Nutrient Task Force (Hypoxia Task Force), Gulf of Mexico Alliance, USEPA, and the Gulf Coast Ecosystem Restoration Task Force, are focused on addressing excess nutrients (nitrogen and phosphorus) within the nation's waterbodies.

The Louisiana Nutrient Management Strategy developed through interagency collaboration of the Coastal Protection and Restoration Authority (CPRA) of Louisiana, LDAF, LDEQ, and LDNR was released in 2014. This statewide strategy for Louisiana addresses nutrient management in both point and nonpoint sources, through coastal restoration and protection activities. Strategies to address nutrients include:

- agricultural BMP;
- advanced wastewater treatment technologies;
- coastal programs and restoration activities focused on managing nutrient levels while meeting regulatory requirements under the CWA; and
- incentive-based approaches for participation of all stakeholders within the watershed community.

The state's Nutrient Management Strategy was developed as one component of a multi-state initiative through the Hypoxia Task Force intended to manage and reduce nutrients entering Gulf of Mexico waters. In 2015, the Louisiana Nutrient Management Strategy team focused on implementation. Team members attended and discussed the state's progress on the states strategies at the spring and fall Hypoxia Task Force Meetings in Columbus, Ohio and Washington, DC respectively. More information on the state strategy can be found at http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/NutrientManagementStrategy.aspx.

5.5 A State Plan for Prioritizing Watersheds for Restoration and Protection in Louisiana

303(d) Program Vision for 2016 through 2022

The CWA Section 303(d) Program provides effective integration for implementation of activities to restore and protect the nation's aquatic resources, where the nation's waters have been assessed, restoration and protection objectives have been systematically prioritized, and Total Maximum Daily Loads (TMDLs) and alternative approaches are being adaptively implemented to achieve water quality goals with the collaboration of states, federal agencies, tribes, stakeholders, and the public.

The USEPA and states worked together to develop the new vision and six (6) goal statements to help coordinate and focus efforts in advancing the effectiveness of the program. The vision and goals are neither regulation nor policy guidance, but provide a mechanism for USEPA and states to better manage the program to achieve water quality goals. USEPA encouraged each state to embrace the vision concept and develop a strategy that outlines a comprehensive, integrated and iterative approach to addressing the challenge of achieving and communicating water quality improvements.

The primary goals of this new long-term vision include prioritization, assessment, protection, alternatives, engagement, and integration. In December 2014, LDEQ submitted a draft prioritization framework document to USEPA for review. LDEQ solicited public feedback in April 2015. The purpose of the framework document is to describe the factors considered when determining priority waterbodies for which TMDLs or TMDL alternatives will be developed. In July 2015, LDEQ provided a list of priority waterbodies to USEPA. LDEQ submitted performance commitments to USEPA in October 2015. LDEQ worked to integrate other

water programs and engage the public and stakeholders throughout the development stages of the framework, priority waterbodies, and performance commitments. The prioritization framework, priority waterbodies, and performance commitments will be included in the 2016 IR.

There has been a long-term connection between the Section 319 NPS program and the CWA 303(d) programs. LDEQ will continue to integrate across federal and state water programs and engage the public and stakeholders to ensure strategic use of available resources to achieve water quality goals.

5.6 Watershed Coordinators

LDEQ WSCs continue to serve as valuable partners in implementing Louisiana's NPS program. In FFY2015, LDEQ partnered with three (3) WSCs located across the state. This Partnership accomplishes several goals listed in Louisiana's 2011-2016 NPS Management Plan including:

- developing WIPs;
- involving appropriate stakeholders in watershed implementation;
- statewide educational programs;
- identifying priority areas in the watershed for BMPs implementation;
- implementing BMPs in watershed priority areas;
- water quality monitoring and data analyses to evaluate effectiveness of BMP implementation; and
- preparing success stories or identifying future actions needed to achieve success.

These WSCs are dedicated to restoring and preserving the water quality in the areas they live and serve.

Bayou Land RC&D

WSC: Colleen Butler and Siva Nunna.
Area: Lake Pontchartrain, Terrebonne and Barataria Basins.
WIPs: Upper & Middle Bayou Terrebonne and Bayou Folse Watersheds.

BAYOU LAND
RC&D Council

FFY 2014

Stakeholders
- Tulane University, BTNEP, Terrebonne Task Force, Lafourche Task Force, South Central Planning and Development, LDAF, USDA-NRCS, Bayou Terrebonne Garden Club, Keep Terrebonne Beautiful, and South Louisiana Wetlands Discovery Center Wetland Youth Summit.

Internships
- Sponsored Tulane University and Nicholls State University students to assist in watershed activities.

Education & Outreach
- Utilized Enviroscape model to engage stakeholders in learning about NPS pollution in both Upper Bayou Terrebonne and Bayou Folse Watersheds.

Pre-BMP Monitoring
- Baseline water quality monitoring in Bayou Folse began in September 2014 at 11 locations in the watershed.

Implementation
- Began working with local and state government in Upper Bayou Terrebonne watershed to gain support in order to hire an inspector to inspect individual home sewage systems. Worked to educate local high school students through the South Louisiana Wetland Discovery Center (SLWDC) and the Terrebonne Youth Advisory Council, potential partners for future implementation.

Post-BMP Monitoring

- Water quality monitoring began in critical areas in the Upper Bayou Terrebonne watershed in September 2014.

FFY 2015

WIPs

- WIPs will be updated on an annual basis.

Pre-BMP Monitoring

- Baseline water quality monitoring in Bayou Folse continued through September 2015. This project will be continued through a contract with the Barataria Terrebonne National Estuary Program (BTNEP).

Implementation

- Continued to work with the local and state government in Upper Bayou Terrebonne watershed to implement individual home sewage system inspections. Met with SLWDC and Keep Terrebonne Beautiful regarding a trash cleanup event and bayou side riparian vegetative plantings using volunteers on Bayou Terrebonne

Post-BMP Monitoring

- Water quality monitoring in critical areas in the Upper Bayou Terrebonne watershed continued through September 2015. This project will be continued through a contract with BTNEP.

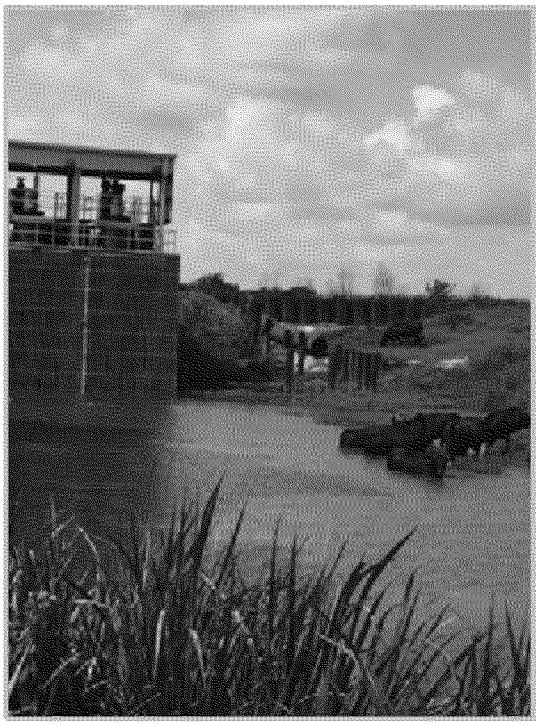


Figure 3. Cattle in Bayou Folse near Lake Drive Pump Station

Figure 4. Bayou Land Interns using sewage sampler.

Capital RC&D

WSC: Donny Latiolais
Area: Lake Pontchartrain, Terrebonne, Pearl and Mississippi Basins.
WIPs: Pontchatoula Creek & Yellow Water River, Selsers Creek, and Comite River Watersheds.

FFY 2014

WIPs
- Develop Comite River Watershed WIP.

Pre-BMP Monitoring
- LDEQ WSs staff will start monitoring Comite River to identify critical areas contributing to high concentrations of fecal coliform bacteria.

Implementation
- Continue individual home sewage inspections in Selsers Creek and start inspections in Comite watershed once critical areas are identified.

Post-BMP Monitoring
- Once inspections start in Comite Watershed, LDEQ WSs staff will start monitoring Comite River to determine the effectiveness of the inspections.

FFY 2015

WIPs
- Developed Tunica Bayou Watershed WIP.

Pre-BMP Monitoring
- Capital RC&D staff will start monitoring Tunica Bayou to identify critical areas contributing to high concentrations of fecal coliform bacteria.

Implementation
- Continue individual home sewage inspections in Comite watershed and started inspections in Big Creek and Tunica Bayou once critical areas were identified.

Post-BMP Monitoring
- LDEQ WSs staff and Capital RC&D will continue monitoring Comite River, Tunica Bayou and Big Creek to determine the effectiveness of the inspections.

Trailblazer RC&D

WSC: Olivia Ward
Area: Red River and Ouachita River Basins.
WIPs: Dugdemona River, Caney Lake and Cheniere Creek Watersheds.

FFY 2014

Stakeholders
- Silviculture landowners and industry representatives.

Educational & Outreach
- Developed and conducted several educational presentations, hands-on activities and field trips at schools, libraries, police jury meetings, water fests, and special events. Also press releases, monthly newsletters and a Facebook page are used for water quality education & outreach.

Pre-BMP Monitoring

- In continuation from 2013, four (4) watershed tours were conducted to survey the watershed for NPS issues, changes in the watershed, and potential problem areas. Pictures at each stop/monitoring location and notes were logged from each tour.

Implementation

- Held Forestry BMP Workshop on September 19, 2014 and May 1, 2015 in targeted area.

Watershed Assessment

- Conducted watershed tour(s) to survey for NPS pollution relating to the listed impairment in Nantachie Creek Watershed.

LDEQ-NPS is establishing partnerships with two (2) distinguished nonprofit organizations to assist in the coordination of watershed restoration across the state. In FY2015, LDEQ-NPS began negotiating contracts with the LRWA and BTNEP. These organizations will assist in both urban and agricultural impaired watersheds, working with communities, LDAF and USDA-NRCS on projects focused to restore priority watersheds through sampling, education & outreach and implementation efforts. LRWA will also be under contract to provide workshops to homeowners across the state. These workshops will provide information on regulatory requirements, system operation and maintenance in an effort to assist homeowners into maintaining their septic systems in compliance with Louisiana law.

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6.0 Meeting NPS Milestones

2015 Louisiana Nonpoint Source Annual Report

6.0 Meeting NPS Milestones

Louisiana's NPS Management Plan includes annual milestones. In FFY 2014, Louisiana's NPS program continued its focus on watershed planning, assessment, monitoring and implementation, in 29 waterbodies.

Basin	Water Body	P	A	M	I	Subsegment
Barataria	Bayou Lafourche			ü	ü	020401
Calcasieu River	Six Mile Creek[1]	ü	ü	ü	ü	030503/030504
	Indian Bayou	ü				030805
Lake Pontchartrain	Middle Comite River	ü				040102
	Comite River	ü	ü	ü	ü	040103
	Natalbany River			ü	ü	040503
	Yellow Water River			ü	ü	040504
	Ponchatoula Creek/Ponchatoula River			ü	ü	040505
	Selsers Creek	ü	ü	ü	ü	040603
	Big Creek (NWQI)	ü	ü	ü	ü	040703
Mermentau River	Bayou Des Cannes	ü				050101
	Bayou Mallet	ü	ü	ü		050103
	Bayou Plaquemine Brule[1]			ü	ü	050201
	Bayou Queue de Tortue (GoMI)	ü	ü	ü	ü	050501
	Bayou Lacassine (MRBI)			ü		050601
	Bayou Chene (MRBI)			ü	ü	050603
Vermilion-Teche	Lake Fausse Pointe	ü	ü			060702
	Vermilion River	ü				060801/060802
	Boston Canal	ü	ü	ü	ü	060910
Mississippi River	Tunica Bayou	ü	ü	ü		070505
Ouachita River	Bayou Louis/Lake Louis	ü	ü	ü		080202/080203
	Big Creek (North)	ü				080903
	Bayou Lafourche (MRBI)			ü	ü	080904
	Turkey Creek (MRBI)			ü	ü	080905/080906
	Lake St. Joseph			ü	ü	081202
	Little River	ü	ü	ü		081601/081602
	Hemphill Creek	ü				081609
Terrebonne	Upper Bayou Terrebonne			ü		120301
	Bayou Folse	ü	ü	ü		120305
[1]Restored						

Table 12. Water bodies included planning (P), assessment (A), monitoring (M) and implementation (I) in FFY2015.

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6.1 LDAF BMP Implementation

The LDAF utilized USEPA Section 319 funds expending $1.97 million to provide technical assistance and BMPs through cost-share and incentive payments on approximately 42,781.23 acres of private farm land in an effort to restore or partially restore surface water quality in seven (7) priority watersheds within the Ouachita, Mermentau, Ponchartrain and Vermilion-Teche River Basins. These BMPs were carried out through the traditional conservation partnership cooperation between the USDA-NRCS, the LDAF and participating SWCD. These local SWCDs included Acadia, Vermilion, Jefferson Davis, Northeast, Catahoula, Evangeline and Tensas-Concordia. Within this fiscal year, a total of 230 cooperator contracts were active with individual private landowners or farm operators. Signed contracts establish the participant's BMP payment schedules and implementation requirements, defining the relationship between themselves and the Federal-State-Local conservation delivery team. To attain Section 319 water quality crop rotation objectives, an array of proven conservation practices such as grade stabilization, conservation, prescribed grazing, heavy use area protection, critical area planting, irrigation land leveling, tillage and residue management and others were cost-shared through this program. Participants are required to implement a total RMS plan through which additional BMPs are prescribed. These additional BMPs, further ensure reduction of water quality impairments and exceed the participants required matching funds. To ensure effective delivery of these necessary BMPs, LDEQ provides water quality data, watershed modeling, targeted sampling, mapping and other critical logistical assistance to ensure maximum effectiveness for our collective efforts in restoring water quality in agricultural settings.

7.0 Highlighted Activities in Priority Watersheds

2015 Louisiana Nonpoint Source Annual Report

7.0 Highlighted Activities in Priority Watersheds

7.1 Big Creek Watershed (subsegment 040703)

Located in the Pontchartrain River Basin.
Flows through Tangipahoa Parish from its headwaters to Tangipahoa River.

Funding

- USDA-NRCS - fund BMPs through NWQI.
- LDAF- fund BMPs through CWA Section 319 FFY2012 work plan.
- LDEQ – fund water quality assessment and monitoring through CWA Section 319 FFY2009 and 2010 work plans.

Integrated Report

Louisiana 2012 and 2014 IR – Big Creek

- Not meeting primary contact recreation (PCR) and SCR designated uses.
- Suspected causes of impairment: fecal coliform bacteria.
- Suspected sources of impairment: dairies.

TMDL

- Recommended an 88 percent reduction in fecal coliform bacteria in order to meet instream water quality standards and restore designated uses.

WIP

- Approved by USEPA R6 on March 6, 2013.

2013

- LDEQ NPS and WS, LDAF and USDA-NRCS staff conducted reconnaissance surveys to determine location of baseline sampling sites.
- February 14, 2013 – LDAF began sign ups. Fourteen applications were received. Farm visits were conducted, soil and waste lagoons were sampled and Certified Nutrient Management Plans (CNMPs) were developed for 11 farms.
- March 22, 2013 – QAPP approved by USEPA R6.
- August 27, 2013 – started collecting baseline samples for fecal coliform analysis at 26 locations.

2014

- Completed baseline sampling (included 26 sampling sites) and located critical areas.
- End of FFY 2014, selected 16 long term sites based on critical areas.
- The following BMPs have been proposed and will be implemented in between 2014 and 2015: Fencing, pipelines, water troughs, HUA-concrete, HUA-rock, stream crossing, forage & biomass planting, grazing land mechanical treatment, pond, critical area treatment, wells, prescribed grazing, portable livestock shade, tree planting, forest site prep, prescribed burning, mulching, forest trails and landing, forest stand improvement, roof runoff structure, closure of waste impoundment, lagoon pump out, 3 or 4 inch pipe, 6 or 8 inch pipe, big gun system, self-propelled big gun system, pump to pipeline connection, and micro irrigation.

2015

- Long term monitoring is ongoing. Preliminary data indicates probable watershed restoration.
- Preliminary ambient monitoring data from 10/7/2014 – 9/2/2015 indicates probable delisting for SCR and PCR.

Long term sites will be monitored for approximately three (3) years to monitor changes in water quality after the implementation of BMPs within the watershed and to document the successful restoration of the watershed.

7.2 Bayou Queue de Tortue Watershed (subsegment 050501)

Located in the Mermentau River Basin.
Flows through Acadia, Lafayette, and Vermillion Parishes.

Funding

- USDA-NRCS - fund BMPs through GoMI.
- LDAF- fund BMPs through CWA Section 319 FFY2012 work plan.
- LDEQ – fund water quality assessment and monitoring through CWA Section 319 FFY 2009 and 2010 work plans.

Integrated Report

Louisiana 2012 IR – Bayou Queue de Tortue

- Not meeting FWP designated use.
- Suspected causes of impairment: Fipronil, nitrate/nitrite ($NO_3/N0_2$), low Dissolved Oxygen (DO), total phosphorus (TP), TDS, total suspended solids (TSS), turbidity and sedimentation/siltation.
- Suspected sources of impairment: irrigated and non-irrigated crop production.

Louisiana 2014 IR – Bayou Queue de Tortue

- TDS, TSS and sedimentation/siltation no longer appears on the report. These parameters are now included under turbidity.
- The suspected sources are now listed as agriculture instead of irrigated and non-irrigated crop production.

TMDL

- Recommended a 60 percent reduction in dissolved oxygen (DO) for man-made NPS loadings in the watershed.
- Recommended a 27.4 percent reduction in TDS to meet the standard for FWP.

WIP

- Approved by USEPA R6 on March 13, 2013.

BMPs

- Focused to reduce the amount of agricultural related nitrogen, phosphorus and sediment leaving the field.
- BMPs include: conservation crop rotation, grade stabilization structures, and nutrient management.
- Implementation of BMPs began in 2012. Implementation and oversight will continue through September 2017.

2013

- LDEQ NPS and WS staff conducted a water quality assessment to determine location of baseline sampling sites.
- February 2013 – LDAF began sign ups. Thirty-four applications were received and 28 contracts developed.
- March 20, 2013 – QAPP approved by USEPA R6.
- July 24, 2013 – started collecting baseline samples at 22 locations.
- BMPs: 369 acres of irrigation land leveling implemented and 4,631 acres under contract.

2014

- Continued baseline sampling in 2014. Will complete baseline sampling in February 2015.
- Will selected long term sites based on critical areas by February 2015.
- Twenty Nine BMPs have been implemented.

2015

- Long term monitoring began in May of 2015.
- July 2015, four (4) additional sites were added to the Grand Marais HUC-12 to allow for additional monitoring of BMPs to be implemented by USDA-NRCS.
- As of December 31, 2015, there are 20 long term monitoring sites, which are sampled twice monthly.

Long term sites will be monitored for approximately three (3) years to monitor changes in water quality after the implementation of BMPs within the watershed and to document the successful restoration of the watershed.

8.0 Statewide Programs

2015 Louisiana Nonpoint Source Annual Report

8.1 Coastal Nonpoint Pollution Control Program (CNPCP)

Hydrologic Modification Impact Analysis and the Coastal Use Permit Process

The Coastal Use Permit (CUP) is the basic regulatory tool of the Office of Coastal Management (OCM) and is required for projects in the Louisiana Coastal Zone. The CUP Program requires persons planning public, private, or commercial projects within the coastal zone to apply for authorization from the OCM prior to construction of any project. Furthermore, it is a requirement that all coastal uses must be found to be in conformance with all applicable Coastal Use Guidelines found in LAC Title 43, Part I, Chapter 7, Subpart B, §701-719. OCM ensures compliance with these guidelines through a Needs, Alternatives and Justification (NAJ) Analysis. In 2014, OCM finalized the Hydrologic Modification Impact Analysis (HMIA) and integrated it into the NAJ process. Since that time, OCM has completed a HMIA for all CUP applications across the board. In 2015 alone there were over 1,500 CUP applications received by OCM.

The HMIA is a tool OCM uses to review proposed activities for potential affects to modify existing hydrology regimes. The HMIA provides guidance for the identification, outlines requirements, and assists with the evaluation of potential adverse impacts to water quality, drainage, and hydrology (Table 13). The HMIA process uses a tiered approach to evaluate projects based on project complexity, and the tiers are as follows: Level 0 – No Modification, Level 1 – Minimal Modification, Level 2 – Intermediate Modification, Level 3 – Moderate Modification, and Level 4 – Significant Modification. As the tiers increase, the amount of information to support justification for the project as proposed and the supporting documentation that adverse impacts will not result from implementation of the project increases.

Hydrologic Modification Impact Analysis Requirements
1. By design or performance: (a) After construction has been completed and the site is permanently stabilized, reduce the average annual TSS loadings by 80 percent. For the purposes of this measure, an 80 percent TSS reduction is to be determined on an average annual basis,* or (b) Reduce the post development loadings of TSS so that the average annual TSS loadings are no greater than predevelopment loadings, and 2. To the extent practicable, maintain post development peak runoff rate and average volume at levels that are similar to predevelopment levels. **Based on the average annual TSS loadings from all storms less than or equal to the 2-year/24hour storm. TSS loadings from storms greater than the 2-year/24-hour storm are not expected to be included in the calculation of the average annual TSS loadings.* A user's guide for the HMIA is available online at http://dnr.louisiana.gov/assets/OCM/permits/NAJ/HMIA.pdf

Table 13. Hydrologic Modification Impact Analysis Requirements

Throughout the permitting process OCM works with the applicants to address specific areas of concern that have been identified. This collaborative process may entail adding, moving, or removing features of a project, identifying BMPs to reduce or eliminate adverse impacts, as well as providing documentation and historical data for the project area. Through this permitting process, the applicant must demonstrate compliance with the conditions listed in Table 13. It should also be noted that, if an applicant is not able

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to document compliance with the conditions in Table 13, then the project would be found to be out of compliance with the Coastal Use Guidelines and OCM would utilize its authority to deny the project due to non-compliance. Records regarding the use of the HMIA incorporation into the CUP process are available online; however, Table 14 (see below) contains a list of representative examples of HMIA submittals from 2015.

Roads, Highways, and Bridges Maintenance

The Louisiana Department of Transportation and Development (LDOTD) is the primary state agency responsible for maintenance and construction of roads, highways, and bridges in Louisiana. Additionally, all activities undertaken by LDOTD or a LDOTD contractor, subcontractor, etc. are defined by LDOTD as "new construction" activities, and must meet certain specifications – this includes construction, operations, repairs, and preventive maintenance. Through the standardization of these practices, LDOTD obtains uniformity and establishes standard policies and procedures in engineering, construction, and operation and maintenance plans for bridges and highways in Louisiana. See Table 14 to review some statistics for operation and maintenance activities applicable to pollution control. The activities in this table are merely a snapshot of activities for management nonpoint source pollution; there are additional activity codes that address NPS.

Maintenance Activities Applicable to Pollution Control 2012-2014*					
Activity Code	Activity Description	Units	2012	2013	2014
BRIDGE AND STRUCTURE MAINTENANCE					
460-60	Inspection of Bridges	Hours	41	57	---
465-01	Clean Deck and Drain	Linear foot	888,671	1,270,875.68	367,768.66
465-17	Remove Drift	Each	419	177	239
ROADSIDE AND DRAINAGE					
440-00**	Erosion Control and Repair	Each	630.5	472	338
440-00**	Erosion Control and Repair	Sq. Yard	---	150	9216.1
440-02	Litter Cleaning of Roadside	Cu. Yd.	7,442.62	7,559.79	45
440-03**	Servicing Litter Barrels	Each	635	500	230
440-03**	Servicing Litter Barrels	Cu. Yd.	---	---	48.50
440-04	Pick Up Litter Collected by Other Organization	Cu. Yd.	619	22	27
440-05	Pick Up Litter Collected by Dept. of Public Safety and Corrections	Cu Yd.	11,442.25	14,526.62	15,800.70
440-06	Pick Up Litter Collected by Sheriff	Cu. Yd.	6	---	---
440-08	Debris Removal and Disposal	Cu. Yd.	86,247.44	4,969.41	19,154.09
450-01	Clean and Maintain Drainage Structures	Each	6,252.20	11,147.61	17,024.54
*All activities listed occurred within the 6217 management area. **Coding changes effective 7/2014					

Table 14. Maintenance Activities Applicable to Pollution Control 2012-2014

Master Farmer Program

During 2015 the Louisiana Master Farmer Program earned the Denver T. Loupe Extension Team Award. The Master Farmer program helps farmers voluntarily use agricultural practices that protect the environment. The Master Farmer Program is proactive and guides farmers with assistance instead of imposed regulations. The efforts of this group demonstrate a dedication to adopting conservation practices and demonstrate a commitment to sustaining natural resources. To date over 200 farmers have completed the program are certified Master Farmers. You can learn more about the Louisiana Master Farmer Program at https://www.youtube.com/watch?v=4ab1iWZumKs.

Clean and Resilient Marina

The Louisiana Clean Marina Program promotes and celebrates adoption of BMPs to assist marinas and recreational boaters in protecting Louisiana's waters. The Gulf of Mexico's five (5) states Alliance consists of Texas, Louisiana, Mississippi, Alabama and Florida. Clean and Resilient Marina Program complements the five States' Clean Marina Program practices already in place and provides additional recommendations to strengthen the local marinas' ability to withstand natural and man-made disasters.

SeaBrook Harbor and Marine of New Orleans has been named Louisiana's first dual Louisiana Clean Marina and Gulf of Mexico Alliance (GOMA) Clean and Resilient Marina, a distinction that puts them in a class of their own in our entire state. Certified as a Louisiana Clean Marina by the LDNR OCM in May of this year, SeaBrook's owner Jeff Montz aggressively pursued additional BMPs and procedures that ensure his marina's ability to endure and quickly reopen after a severe storm and therefore qualified for the GOMA's Clean and Resilient Marina honor.

Figure 5. SeaBrook Marine and Montz Family

For marinas on the Gulf of Mexico that are exposed to gulf storms, being more resilient means being able to prevent loss of life and personal injury, reduce property damage, and resume normal business activities as soon as possible following a hazardous storm. In September, the partnership of states known as the GOMA, OCM, and Louisiana Sea Grant joined together to present SeaBrook with this latest achievement. Congratulations to the SeaBrook Marine and the Montz family.

Greater New Orleans Urban Water Plan

Learning to increase resiliency by living with water was one of the integral factors in the development of the Greater New Orleans Urban Water Plan in 2013. The plan has served as a tool for educating both residents and policy makers about the benefits of thoughtful water management. Now two (2) years after the release, the plan has begun to take form with implementation of a series of demonstration projects in commercial, recreational, and residential areas in and around New Orleans. New technologies are being implemented and tested at different scales throughout the area and have increased community engagement. One such initiative the adoption of a strategy to "green" is a largely paved industrial park in efforts to reduce frequent flooding and create value to the neighborhood and businesses in Jefferson Parish. Another effort includes the New Orleans Redevelopment Authority who has partnered with

community and local landscape designers for the development of six (6) different neighborhood based rain gardens. Additional efforts include the New Orleans Sewerage and Water Board (NOSWB) which is investing in green infrastructure pilot programs throughout the area.

15th Annual Nonpoint Source Storm Water Pollution and Solutions in Jefferson Parish

2015 marked the fifteenth year for the Jefferson Parish Storm Water Poster and Essay Awards Ceremony, which challenges students to depict or describe at least one source of NPS pollution and present potential solutions. This year 18 Jefferson Parish Public School System students received honors from the Jefferson Parish Government for their submissions in the poster and essay contest. Also at the awards ceremony a representative from the Greater New Orleans Water Collaborative described how green infrastructure can be used to provide important services for communities.

Bayou Teche Paddle Trail Nets National Designation

The U.S. Department of the Interior recognized the Bayou Teche Paddle Trail as a National Waters Trails System in January 2015. This designation is the 18th of its kind in the United States, and is due in large part to the Teche Project, a non-profit group advocating for improved water quality in the Bayou Teche Watershed through the reduction of NPS pollution. At 135 miles in length the Bayou Teche snakes through four (4) parishes from Port Barre to Morgan City

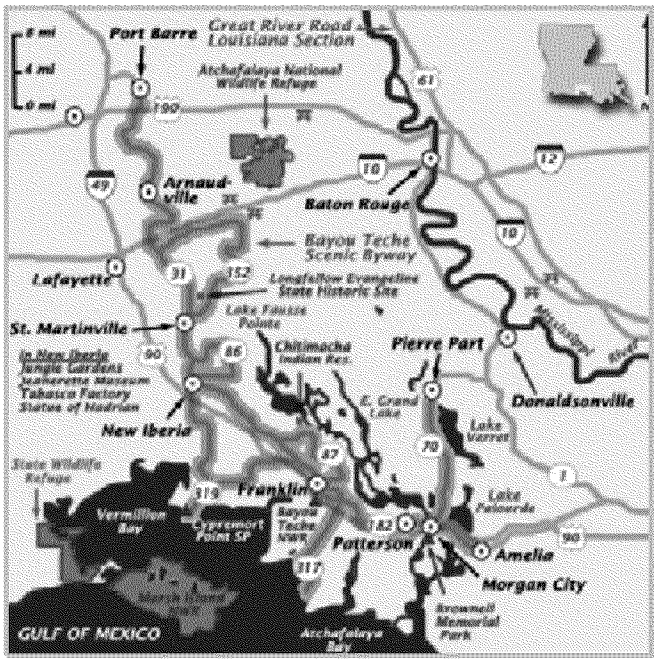

Figure 6. Map of Bayou Teche and Surrounding Parishes

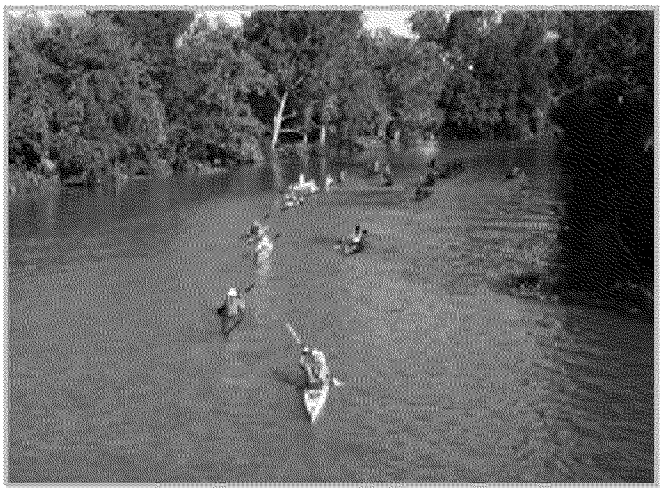

Figure 7. Bayou Teche Paddle Trail

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8.2 Drinking Water Protection Program

LDEQ's Drinking Water Protection (DWP) staff implemented the following source water protection activities during this reporting period.

Note that certain activities are conducted for every parish. These routine activities are listed by parish below in bullet format along with parish-specific protection activities. Routine activities that occur in every parish include the following;

- explained the DWP program to water systems and local officials;
- developed contingency plans with water systems;
- updated source water assessment data;
- introduced a model ordinance;
- educated local businesses identified as potential sources of contamination to drinking water sources, and;
- conducted public education (including community meetings, school presentations, etc.)

Any of these activities that are not reported below were either conducted during a previous reporting period or have yet to be implemented. Also note that while only ordinances that have been passed are reported below, the DWP staff introduces a model ordinance to every governing body in each targeted parish that has public water supply wells within its jurisdiction.

Allen Parish

DWP program initiated:
- The program was initiated in July 2014.

Source Water Assessment Data:
- Global Positioning System (GPS) data was obtained for nine (9) new potential sources of contamination.

Groundwater protection ordinance:
- An ordinance was adopted by the City of Oakdale.

Educational visits:
- Twenty-eight (28) educational visits were made to owners and operators of businesses/facilities identified as potential sources of contamination.

DWP presentation(s):
- A presentation was presented to the Town of Kinder.

Avoyelles Parish

DWP program initiated:
- The program was initiated in July 2004.

Source Water Assessment Data:
- GPS data was obtained for four (4) new public supply wells and two (2) new potential sources of contamination.

Caldwell Parish

DWP program initiated:
- The program was initiated in July 2013.

DWP presentation(s):
- Presentations were presented at the Caldwell Parish Farm Safety Day.

Evangeline Parish

DWP program initiated:
- The program was initiated in July 2015.

Public Supply Water System(s):
- There are 15 systems in Evangeline parish.

Source Water Assessment Data:
- GPS data was obtained for three (3) public supply wells and 11 potential sources of contamination.

Groundwater protection ordinance:
- An ordinance was adopted by the Village of Pine Prairie.

Educational visits:
- Seventy-one educational visits were made to owners and operators of businesses/facilities identified as potential sources of contamination.

DWP presentation(s):
A presentation was presented to Bayou Des Cannes water system.

Community meeting(s):
- One (1) community meeting and four (4) committee meetings were held in Evangeline parish.

Ouachtia Parish

DWP program initiated:
- The program was initiated in July 2009.

Source Water Assessment Data:
- GPS data was obtained for one (1) new public supply well and two (2) new potential sources of contamination.

Educational visits:
- Two (2) educational visits were made to owners and operators of businesses/facilities identified as potential sources of contamination.

Sabine Parish

DWP program initiated:
- The program will be officially initiated in 2017; however, due to the proximity of LRWA field staff field work began in 2015.

Source Water Assessment Data:
- GPS data was obtained for two (2) new public supply well and three (3) potential sources of contamination.

Educational visits:
- Two (2) educational visits were made to owners and operators of businesses/facilities identified as potential sources of contamination.

St. Martin Parish

DWP program initiated:
- The program was initiated in July 2015.

Public Supply Water System(s):
- There are 18 systems in Evangeline parish.

Groundwater protection ordinance:
- An ordinance was adopted by the Town of Henderson.

DWP presentation(s):
- Five (5) presentations were presented at St. Martinville High School.

Community meeting(s):
- One (1) community meeting has been held in St. Martin parish.

St. Mary Parish

DWP program initiated:

- The program was initiated in July 2014.

Source Water Assessment Data:

- GPS data was obtained for two (2) new public supply wells and one hundred thirty-nine (139) potential sources of contamination.

Educational visits:

- Two hundred fifty (250) educational visits were made to owners and operators of businesses/facilities identified as potential sources of contamination.

Community meeting(s):

- One (1) community meeting and five (5) committee meetings were held in St. Mary parish.

Bayou Lafourche Sewage Project Ascension, Assumption, Lafourche & Terrebonne Parish

In FFY2015, LDEQ's DWP staff continued focus on Bayou Lafourche, a drinking water source for six (6) public water systems and over 200,000 residents. The DWP staff is spearheading efforts to address sources in the bayou contributing untreated sewage in an effort to restore the bayou's PCR designated use for fecal coliform.

LDEQ DWP staff coordinated with the Louisiana Department of Health and Hospitals (LDHH) and the BTNEP on a repair/replacement project for malfunctioning individual home sewage treatment systems targeting systems contributing untreated sewage to the Bayou. Homeowners are referred to LDHH based on sampling analysis, and BTNEP offers funding to the homeowner for the required upgrades to get the system in compliance.

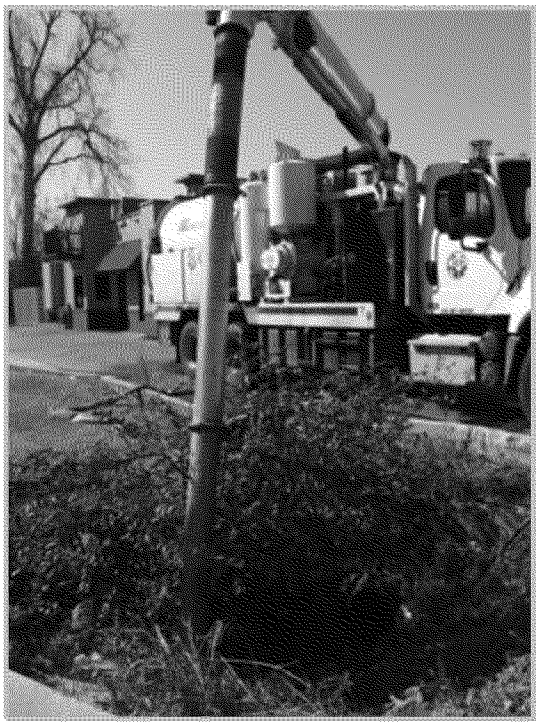

Figure 8. Vacuum truck removing sludge from a culvert.

Figure 9. Lionel Franklin (City of Donaldsonville) and Jesse Means (LDEQ) overseeing robotic camera.

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DWP staff and the City of Donaldsonville coordinated efforts to identify a source of sewage in a ditch within the city's sewage service area. In an effort to isolate the source, several samples were taken upstream of the ditch in question for the presence of optical brighteners and fecal coliform bacteria. Optical brighteners are compounds added to laundry detergent which indicate if pollution is from septic and sewer line leaks. When coupled with fecal coliform bacteria sampling, testing for optical brighteners is a viable procedure for use in detecting human fecal contamination. To eliminate point sources, samples were taken at various sites upstream, for example a nearby car wash and restaurant. The City performed a camera survey and determined that nearby sewer lines and storm drain pipes were functioning properly. As a result of the data analysis it is believed that a nearby restaurant may be the source of the sewage discharge and has been referred to LDHH enforcement.

DWP staff is also assisting an engineer with Assumption Parish to locate the source of sewage discovered in a storm drain in the City of Napoleonville. In FFY2015, LRWA identified the source of sewage infiltration using a camera survey. Plans are in place to excavate the portions of the storm drain where sewer lines are leaking. DWP staff is assisting in researching potential funding sources to assist with the repairs.

DWP staff coordinated with the LRWA, LDHH, Nicholls State University and BTNEP to develop an individual home sewage treatment system maintenance class. The class is intended to assist residents gain a better understanding of how their systems work and the proper maintenance to maintain compliance with Louisiana law.

8.3 Source Water Assessment Program

Data Collection and Risk Assessment

Source water risk assessments were completed for all public water supply systems between 2000 and 2003. By utilizing data collection, assessment, and automated data processing tools which were developed and implemented in 2013, LDEQ is able to collect and process new assessment data on an as needed basis. Specifically, the Source Water Assessment Program (SWAP) Calculator automates the generation of new source water assessment reports based on existing data and new data collected with the SWAP Mobile data collection tool. These tools ensure data integrity, improve data management efficiency, and facilitate reporting to USEPA through the GRTS.

In 2015, utilizing SWAP Mobile, new source water assessment data was collected in three (3) DWP program target parishes and two (2) non-target parishes allowing for more than 60 source water assessment reports to be generated with the SWAP Calculator. These new reports, and the data used to generate them, are used by DWP staff and citizen volunteers when performing visits to businesses that are potential sources of contamination to inform and educate them of the potential impact on their drinking water source.

8.4 Statewide Individual Home Sewage System Program

Many of Louisiana's watershed impairments are caused by high concentrations of fecal coliform bacteria. The state's numerical criteria for fecal coliform bacteria for designated uses are as follows:

Designated Use	Louisiana Numerical Criteria
Primary Contact Recreation	fecal coliform bacteria: 400 cells/100 mL
Secondary Contact Recreation	fecal coliform bacteria: 2000 cells/100 mL
Public Water Supply	fecal coliform bacteria: 2000 cells/100 mL
Oyster Propagation	fecal coliform bacteria: 14 cells/100 mL

Table 15. Louisiana's standard criteria for fecal coliform

LDEQ and WSCs partner with LDHH and the parish and/or local governments in developing education and outreach programs and assist in inspecting individual home sewage systems located in priority watersheds.

In FFY2015, the following individual home sewage system inspection projects are proposed:

Watershed	Project Summary
Tunica Bayou	In FFY2015, a contract was issued to Capital RC&D to conduct monitoring and individual home sewage system inspections.
Comite River	In FFY2014, a contract issued to Capital RC&D to conduct monitoring and individual home sewage system inspections. These activities continued in FFY2015.
Middle Comite River	In FFY2015, a contract was developed for Capital RC&D to conduct monitoring and individual home sewage system inspections and should be in place early 2016.
Big Creek	In FFY2015, the contract was amended for Capital RC&D to conduct individual home sewage system inspections. LDEQ is currently monitoring.
Selsers Creek, Poncha-toula Creek and Yellow Water River	In FFY2014, a contract issued to Capital RC&D to conduct individual home sewage system inspections. These activities continued in FFY2015.
Indian Bayou	Special Grant in FFY2014 allocated to LDEQ. In FFY2015 a contract was developed for LRWA to conduct monitoring and individual home sewage system inspections. A contract will be in place in early 2016.
Natalbany River	A contract will be issued to LPBF to complete the monitoring and individual home sewage system inspections.

Table 16. Proposed individual home sewage system project for FFY 2015

These projects require support and involvement from local governments to be successful. The inspectors are funded by Section 319 funds. They must be deputized by the local government in order to conduct inspections on private property. A list of permitted systems is provided by LDHH. A map including the permitted systems is generated to assist the inspector. An inspection is conducted at each site. The inspection includes homeowner notification; contact with homeowner; location of system; type of system,

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motor operational; access the aeration tank to determine if the motor is introducing air; access the clarifier to conduct a sludge test and will leave a tag notifying homeowner of results (green tag for passed, yellow tag indicating system could not be found and a red tag for failed).

In FFY2015, LDEQ began partnering with LRWA. LRWA has been a driving force in all 64 parishes providing assistance to both urban and rural areas. LRWA will develop an individual home sewer treatment system workshop geared at educating homeowners of the importance of regular inspection and maintenance of their individual home sewage systems. A contract is expected to be in place by March of 2016. The workshops will be provided several times in each area of the state where individual home sewage inspection projects are being conducted. The classes will be funded by Section 319 funds.

In addition, LDEQ and LDHH is partnering to develop an individual home sewage system inventory database for efficiently managing and tracking inspections, upgrades and permits. LDHH will grant LDEQ-NPS and inspectors contracted by Section 319 projects access to their permitting and inspection database. In FFY2015 LDEQ-NPS and LDHH-Sanitarian Services collaborated to upgrade and modify the database and develop digital field datasheets. LDEQ-NPS will provide each inspector with a hand held computer funded by Section 319 funds for field inspections with the ability to populate the digital field datasheets, which will transmit into LDHH's database in real time. The update is expected to be completed by March of 2016.

9.0 Appendix

2015 Louisiana Nonpoint Source Annual Report

Statewide Milestones for Water Quality Improvement	2015
Number of water bodies identified in LA's 1998/2000 IR or subsequent years as being primarily NPS impaired that are partially or fully-restored (WQ-10): Identify fully restored water bodies in Appendix C of state's IR primarily impaired by NPS pollutants in 1999 court ordered 303(d) list or 1998/2000 IR; review NPS related activities in watershed where water body was restored; write NPS success story; and identify activities to maintain water quality.	3
Estimated annual reductions in pounds of nitrogen from NPS to water bodies (from Section 319 funded projects) (WQ-9a): Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of nitrogen; and include information in NPS annual report.	217,081
Estimated annual reductions in pounds of phosphorus from NPS to water bodies (from Section 319 funded projects) (WQ-9b): Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of phosphorus: and include information in NPS annual report.	79,803
Estimated annual reductions in Pounds of Sediment from NPS to Water bodies (from Section 319 funded projects) (WQ-9c): Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of sediment: include information in NPS annua report.	59,672,000
Number of NPS impairments removed from LA's IR: Annually review state IR for NPS impairments (DO, fecal coliform bacteria, TSS, etc.) removed as a result of NPS activities and include information in NPS annual report. Compare the previous IR to the current IR. Number is based on the 2014 IR.	1
Progress in reducing unliquidated obligations (ULO): Percentage of ULO funds anticipated yearly for both LDEQ and LDAF combined (total remaining funds/total awarded = percentage ULO).	47%

Notes

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Nonpoint Source

PROGRAM

DEQ

LOUISIANA