Nonpoint Source
PROGRAM

Annual Report

Federal Fiscal Year (FFY) 2022

DEQ
LOUISIANA

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1.0 EXECUTIVE SUMMARY

The Louisiana Department of Environmental Quality (LDEQ) administers Louisiana's Nonpoint Source (NPS) Program and collaborates with the Louisiana Department of Agriculture and Forestry (LDAF) and other agencies and organizations to implement the statewide program to improve water quality across the state. Activities undertaken through these partnerships include prioritization of watershed planning and implementation activities, evaluating progress, and reporting program activities. This interagency coordination is the strength of Louisiana's NPS Program, resulting in water quality restoration and improvement, as well as success stories for the state. Louisiana's federal fiscal year (FFY) 2022 NPS Annual Report has been prepared in compliance with Section 319 of the Clean Water Act (CWA). This report outlines progress made in reducing NPS pollution and improving water quality within Louisiana. Sources of NPS pollution include agricultural production, forestry, sand and gravel mining, urban storm water runoff, construction, and onsite disposal systems (OSDS).

OSDS maintenance issues continue to be a concern in Louisiana; therefore, LDEQ-NPS continues to place emphasis on water quality problems associated with OSDS. Several partners remain actively involved in inspecting systems and educating homeowners on the importance of protecting Louisiana's waterways by properly maintaining sewage systems. Partners engaged in this effort include Capital Resource Conservation & Development Council (RC&D), Louisiana Rural Water Association (LRWA), Bayou Vermilion District (BVD), and Barataria-Terrebonne National Estuary Program (BTNEP).

In 2022, the NPS Program and its partners participated in watershed restoration activities and education and outreach across the state. These activities led to substantial progress in reducing NPS pollution, improving water quality, and therefore, will continue to be implemented in watersheds in need of restoration. 2022 NPS Program highlights are as follows:

- LDEQ participated in 5 outreach and educational events;
- LDEQ and LDAF managed approximately $2.9 million of Section 319 grant funds in order to implement projects to reduce NPS pollution and improve water quality;
- LDEQ continued watershed planning and implementation activities with one watershed coordinator (WSC) and three watershed groups that are located in various parts of the state;
- LDEQ completed a watershed plan on two subsegments within the Terrebonne Basin, which was subsequently approved by EPA;
- LDEQ, LDAF, and United States Department of Agriculture – National Resources Conservation Service (USDA-NRCS) continue partnering in watersheds prioritized through the National Water Quality Initiative (NWQI);
- LDEQ's NPS and TMDL staff worked together on the New Vision Initiative;
- LDEQ Water Surveys (WS) staff provided water quality sampling for the NPS program in 12 watersheds; several partners provided water quality sampling for the NPS program in four watersheds.
- Louisiana continues to focus on watershed planning, assessment, monitoring and implementation in 20 watersheds;

- LDEQ's Drinking Water Protection Program (DWPP) implemented activities in Vermilion-Teche, the Lake Pontchartrain Basin, the Mississippi River Basin and the Pearl River Basin;
- LDEQ published monitoring data in EQuIS and the EPA WQX Data Warehouse for active watersheds;
- LDEQ developed maps using the Watershed Delineator from the ArcGIS Soil and Water Assessment Tool (ArcSWAT) for active watersheds to assist in watershed planning, implementation, and monitoring.

LDEQ's DWPP staff engaged in source water protection (SWP) activities in various parishes, which included educating local businesses identified as potential sources of contamination to drinking water sources, conducting public community meetings and school presentations, developing contingency plans with water systems, as well as updating source water assessment data.

LDEQ, LDAF, and the USDA-NRCS continue to work together to improve the process of restoring and protecting watersheds. The success of LDEQ's NPS program is attributed to proficient collaboration of federal, state, and local governments, collaborating with universities, non-profit organizations, and the public. These alliances will continue to be the basis for watershed and statewide efforts during 2023.

2.0 SECTION 319 FUNDING

2.1 LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY NONPOINT SOURCE PROGRAM

Louisiana's NPS program receives funding through CWA Section 319, prioritized to fund projects in coordination with USDA's Farm Bill, to implement its water quality goals and objectives. LDEQ continued collaborating with partners to conduct water quality monitoring, inspect OSDS systems, and to assist in developing WIPs to be implemented by LDAF and USDA-NRCS in NPS priority watersheds.

LDEQ utilized approximately $2.0 million in CWA Section 319 funds to support the NPS and Source Water Protection Program (SWPP), watershed coordination, NPS monitoring, watershed planning, and conservation practice implementation, to protect and/or restore recreational waters and drinking water supplies. Table 1 illustrates LDEQ Section 319 grant expenditures.

Grant Year	LDEQ (Federal)
FFY17	$391,200.00
FFY18	$386,500.00
FFY19	$382,700.00
FFY20	$398,900.00
FFY21	$409,600.00
TOTAL	$1,968,900.00

Table 1: LDEQ Section 319 Grant Expenditures

2.2 LOUISIANA DEPARTMENT OF AGRICULTURE AND FORESTRY

To provide technical assistance and best management practices (BMPs) through cost-share and incentive payments, LDAF expended approximately $909,714.98 on watershed implementation within multiple watersheds around the state. Implementation, planning and/or technical assistance was conducted on approximately 17,621.58 acres of private farm land in an effort to restore or partially restore surface water quality in seven priority watersheds within the Ouachita River, Mermentau River, and Vermilion-Teche Basins. Table 2 illustrates LDAF Section 319 grant expenditures.

Grant Year	LDAF (Federal)
2015	$8,869.80
2016	$578,386.37
2017	$12,892.51
2018	$215,242.78
2019	$94,323.52
TOTAL	$909,714.98

Table 2: LDAF Section 319 Grant Expenditures

3.0 WATER QUALITY MONITORING AND IMPLEMENTATION

3.1 LDEQ NONPOINT SOURCE

In FFY 2022, water quality monitoring continued in 16 watersheds (Table 3). The data collected assists LDEQ and its partners in making valuable decisions. Pre-BMP monitoring assists in identifying critical areas contributing to NPS pollutant loads. This aids in the selection of the appropriate types of BMPs needed in the most suitable locations. Post-BMP monitoring assists LDEQ and partners in determining if water quality is improving.

Watershed	Subsegment	Basin
Comite River	040103	Lake Pontchartrain
Middle Amite River	040302	
Yellow Water River	040504	
Bayou des Cannes	050101	Mermentau River
Bayou Mallet	050103	
Bayou Queue de Tortue	050501	
Bayou Chene	050603	
Bayou du Portage	060703	Vermilion-Teche River
Vermilion River	060801	
Thompson Creek	070502	Mississippi River
Big Creek (North)	080903	Ouachita
Upper Bayou Lafourche	080904	
Hemphill Creek	081609	
Bayou Grosse Tete	120104	Terrebonne
Bayou Maringouin	120111	
Bayou Folse	120305	

Table 3: Watersheds in which water quality monitoring was conducted in FFY2022

LDEQ's NPS staff developed WIPs indicated in Table 4. WIPs developed for other priority watersheds are updated as necessary as water quality data becomes available and projects identified in the plan are implemented. In FFY 2022, LDEQ-NPS completed WIPs and submitted to EPA R6 for review. Watersheds are indicated in Table 4.

Watershed	Subsegment	Basin
Bayou Grosse Tete	120104	Terrebonne
Bayou Maringouin	120111	Terrebonne

Table 4: Draft WIPs accepted in October 2022

Watershed planning for the watersheds indicated in Table 5 will begin in FFY 2023.

Watershed	Subsegment	Basin
Bayou Courtableau	060204	Vermilion Teche
Bayou Bartholomew	080401	Ouachita

Table 5: Watershed planning to begin FFY 2023

3.2 LOUISIANA DEPARTMENT OF AGRICULTURE AND FORESTRY

LDAF provided technical assistance and BMP implementation on 17,621.58 acres in seven watersheds, see Table 6.

Watershed	Acres Implemented	Basin
Bayou Queue De Tortue	1,470.5	Mermentau River
Bayou Des Cannes	2,175.5	Mermentau River
Bayou Mallet	5,767.8	Mermentau River
Vermilion River	51	Vermilion Teche
Big Creek (North)	3,482	Ouachita River
Bayou Du Portage	1,375.16	Vermilion Teche
Bayou Lafourche	3,299.62	Ouachita River
TOTAL	17,621.58	

Table 6: Technical Assistance and BMP implementation

These BMPs were carried out through the traditional conservation partnership cooperation between the USDA-NRCS, the LDAF and participating Soil and Water Conservation Districts (SWCDs). These local SWCDs included Acadia, Vermilion, St Martin, Lafayette, Morehouse, St. Landry, Lasalle, Evangeline, and Bouef River. 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 water quality 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 conservation 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, planning, targeted sampling, mapping, and other critical logistical assistance to ensure maximum effectiveness for our collective efforts in restoring water quality in agricultural settings.

4.0 COORDINATION WITH PARTNERS

4.1 LDEQ WATER SURVEYS

The Louisiana Department of Environmental Quality (LDEQ) Water Surveys (WS) staff fundamentally serves the Department as an intrinsic element of sampling efforts. WS successfully monitored 12 NPS watersheds [refer to Table 7].The data collected helps establish current water quality conditions in the watersheds, identifying geographic areas for targeting best management practices (BMP) and on-site wastewater disposal systems (OSDS) inspection locations; and tracks changes in water quality over time from BMP implementation and OSDS inspections in the watersheds.

WS also collaborates with the LDEQ Water Permits Division; Standards and Assessment; and the Total Maximum Daily Loads (TMDL) group under the long-term vision projects for assessment, restoration and protection under the Clean Water Action Section 303 (d) Program.

BASIN	WATER BODY	WS – MONITORING IN SUPPORT OF
Lake Pontchartrain Basin	Comite River (040103)	OSDS Inspections
Mermentau River Basin	Bayou des Cannes (050101)	LDAF BMPs
	Bayou Queue de Tortue (050501)	LDAF BMPs
	Bayou Mallet (050103)	Interim Sampling for LDAF * LDAF BMPs
	Bayou Chene (050603)	LDAF BMPs
Vermilion-Teche River Basin	Bayou Courtableau (060204)	New Watershed – Monitoring/WIP TBD
	Bayou du Portage (060703)	LDAF BMPs
	Vermilion River (060801)	OSDS Inspections / LDAF BMPs
Ouachita River Basin	Bayou Bartholomew (080401)	New Watershed – Monitoring/WIP TBD
	Big Creek (North) (080903)	LDAF BMPs
	Upper Bayou Lafourche (080904)	LDAF BMPs
	Lake St. Joseph (081202) TBD	LDAF BMPs [1]BIL Funding / WIP N/A
	Hemphill Creek (081609)	LDAF BMPs
Terrebonne Basin	Bayou Grosse Tete (120104)	LDAF BMPs TBD
	Bayou Maringouin (120111)	LDAF BMPs TBD
[1]Lake St. Joseph (081202) monitoring will support the Louisiana Nutrient Loading Reduction through the Bipartisan Infrastructure Law (BIL) Gulf Hypoxia Program (GHP) to conduct targeted agricultural BMPs implemented on prioritized tracts within the Lake St. Joseph and Cypress Bayou watersheds to reduce agriculture-induced nutrient loading in the Tensas River Basin. Sampling Plan under development.		
Long-Term Vision Activity		
Water Planning and Assessment Division / TMDLS	Natalbany River (040503) Monitoring	NPS OSDS Inspections

Table 7: Monitored NPS watersheds

WS brings a multifaceted qualitative approach to characterizing and observing the size and appearance of these waterbodies and their surroundings to gain perspective and understanding of the watersheds. This along with the quantitative research through sampling data analysis can assist in determining the causes and effects of impairments by tracking water quality changes through BMP implementation and OSDS inspections.

4.2 WATER STANDARDS AND ASSESSMENT

The Water Quality Standards and Assessment Section conducts work to support appropriate water quality standards and to routinely assess their degree of support in state waters. The Section also curates water quality data collected by regional field staff. Activities performed by the section during the fiscal year include:

- Performed review of 936 data packages for technical acceptability;
- Continued maintenance and updates of the LEAU Web Portal to facilitate public access to water quality data (https://waterdata.deq.louisiana.gov);
- Continued maintenance of a Fishing Consumption and Swimming Advisories web map and application for smartphones (www.deq.louisiana.gov/page/fishing-consumption-and-swimming-advisories);
- Development of an online interactive map of assessments for the 2022 Water Quality Integrated Report (IR) and application for smartphones (www.deq.louisiana.gov/page/louisiana-water-quality-integrated-report);
- Validation, synthesis, and analysis of nutrients, water quality, and biological data collected from 2019-2021 for detection of nutrient thresholds in lakes in the inland ecoregions of South Central Plains Flatwoods (SCPF), South Central Plains Tertiary Uplands (SCPTU), South Central Plains Southern Tertiary Uplands (SCPSTU), and the Upper Mississippi River Alluvial Plains (UMRAP) ecoregions;
- Development of a nutrient assessment protocol in inland rivers and streams (SCPF, SCPTU, SCPSTU, UMRAP, and the Terrace Uplands (TU) ecoregions);
- Analysis of water quality data collected to establish appropriate dissolved oxygen (DO) criteria in the Southern Plains Terrace and Flatwoods (SPTF) ecoregion;
- Review of coastal DO criteria and consideration of secondary data components for development of revised DO criteria in three coastal subsegments;
- Expansion of field data collection to include algal metrics for targeted projects;
- Expansion of Coastal Dissolved Oxygen Study to include profile data in routine Ambient Water Quality Monitoring for 3 coastal subsegments;
- Analysis and synthesis of existing data to determine methods for developing appropriate numeric turbidity criteria for select waterbodies in Louisiana;
- Ongoing collection of fish tissue for the Louisiana Mercury Initiative and the updating of fish consumption advisories in Louisiana;
- Participation in Louisiana Watershed Initiative (LWI);
- Participation in Gulf of Mexico Alliance (GOMA) through the Water Resources Team, Data and Monitoring Team, Monitoring Community of Practice, and All-Hands Meeting;
- Expanded GOMA participation to include membership to the Alliance Coordinating Team for Water Resources;
- Participation in EPA Hypoxia Task Force through the Coordinating Committee;
- Participation with the Coastal Protection and Restoration Authority (CPRA), Louisiana Department of Agriculture (LDAF), Louisiana Department of Natural Resources (LDNR), Louisiana State University Agricultural Center, and Governor's Office of Coastal Activities (GOCA) for coordination

and support of EPA Hypoxia Task Force and the Louisiana Nutrient Reduction and Management Strategy (NRMS) (https://deq.louisiana.gov/page/nutrient-management-strategy);

- Completion of report on Nitrogen and Phosphorus Trends of Long-Term Ambient Water Quality Monitoring Sites in Louisiana in support of the NRMS;
- Awarded the FY22/23 EPA Gulf Hypoxia Program (GHP) grant to support NRMS partners and Hypoxia Task Force goals for nutrient reductions (Infrastructure Investment and Jobs Act funds);
- Completion of the FY19 Hypoxia Task Force Grant that supported two projects with NRMS partners and Hypoxia Task Force goals for nutrient reductions;
- Development of Louisiana Nutrient Reduction and Management Strategy 2021 Annual Report;
- Continued data collection efforts to support Biotic Ligand Model Methodology and Selenium Freshwater Aquatic Life Criteria;
- Development of Quality Assurance Project Plans (QAPPs) for Pesticides Sampling and Analysis, and for Trace Metals Monitoring for Assessment in Louisiana Surface Waters Using Clean Sampling and Analysis Techniques;
- Participation in the Louisiana Chapter of the American Fisheries Society annual meeting;
- Participation in the Association of Clean Water Administrators (ACWA) on the Executive Committee; Monitoring, Standards, and Assessment Committee; Watersheds Committee; EPA Planning, Program Guidance, and Metrics Committee; Nutrients Policy Committee; Regional Nutrients Working Group; Water Quality Modeling Workshop and the Nutrient Permitting Workshop; Annual Meeting; and Cross-program PFAS Workshop;
- Completion of contract for Pontchartrain Conservancy water quality monitoring around Lake Pontchartrain (2020-2021);
- Management of contract for study of microplastics sources and types in Toledo Bend;
- Collection of eDNA data in cooperation with Jonah Ventures to advance their work in sequencing environmental DNA;
- Participation in LDEQ Monthly Water Program Workgroup meetings;
- Presentation at the State of the River-Vermilionville hosted by the Bayou Vermilion Preservation Association;
- Participation in the Louisiana Master Farmer Partners Group;
- Participation in the Nutrient Tracking Tool Workshop;
- Participation in the Lake Providence Watershed Council;
- Participation in USGS National Hydrography Technical Exchange, Hydrography Community, and National Hydrography Stewards groups;
- Conducted Harmful Algal Bloom (cyanobacteria) investigation, pilot study implementation, and inclusion of algal pigment data collection for select studies, and expanded project to include additional data metrics for the 2022 field season;
- Participation in Harmful Algal Bloom training and workshops;
- Participation in satellite imagery training, and conducted internal processing and sharing of cyanobacteria bloom imagery to applicable agencies;
- Initiated next cycle of Triennial Review with public notice;
- Completion of Report of Findings for Triennial Review for State Surface Water Quality Standards; rule WQ111 will track this effort;
- Participation in USEPA R6 Aquatic Life Criteria for Toxics Outreach Workshop;

- Reviewed final USGS toxicity testing study of chloride and sulfate; initiated data review to evaluate potential criteria revisions of these parameters;
- Initiated review of ambient water quality monitoring site station types;
- Supported LDEQ Water Permits Division in implementation of ammonia criteria into LPDES permits;
- Reviewed and commented on USEPA PFOS aquatic life criteria;
- Participation in meeting with LDEQ staff to discuss use of submersible drones in support of water quality standards efforts;
- Participation in meetings with various groups interested in credit generation for the Louisiana Water Quality Trading Program (https://deq.louisiana.gov/page/water-quality-trading);
- Participation in the Lower Mississippi River Conservation Committee;
- Final submittal to and approval by EPA of the 2022 Water Quality Integrated Report (IR);
- Final submittal to and approval by EPA of the 2022-2025 Quality Assurance Project Plan: Ambient Water Quality Monitoring Network (QAPP_1004_r11).
- Submitted updates to the Water Monitoring Strategy to EPA;
- Participation in the 2021 Association of State Drinking Water Administrators Annual Conference virtually;
- Participation in EPA's Aquatic Life Criteria for Toxics Outreach Workshop;
- Participation in Tulane's 2nd Annual Lower Mississippi River Science Symposium;
- Participation in the 2022 Louisiana Environmental Conference and Trade Fair;
- Participation in Level 1 Applied Fluvial Geomorphology course;
- Participation in the 2021 North American Lake Management Society 12th National Monitoring Conference: Working Together, Virtually, for Clean Water;
- Participation in the 2022 EPA National CWA 303(d) Training Workshop and National Water Quality Data Management Training Workshop;
- Participation in the 2022 EPA National Training Workshop on Water Quality Data, Assessment, and Plans;
- Participation in statistical software training for R and SAS® Viya®;
- Participation in the 19th Annual EPA Drinking Water Workshop virtually;
- Review of 289 Solicitation of View documents for water quality concerns;
- Participation in virtual BTNEP Water Quality Action Team Meeting; and
- Review of 316(b) (cooling water intake structure studies and reports) for Water Permits Division.

4.3 TOTAL MAXIMUM DAILY LOAD SECTION: A STATE PLAN FOR PRIORITIZING WATERSHEDS FOR RESTORATION AND PROTECTION IN LOUISIANA

The CWA Section 303(d) Program provides effective integration for implementation of activities to restore and protect the nation's aquatic resources where the waters have been assessed. The primary goals of the "New Vision" approach to the TMDL program include prioritization, assessment, protection, alternatives, engagement, and integration. Restoration and protection objectives have been systematically prioritized, and TMDLs and alternative approaches are being adaptively implemented to achieve water quality targets with the collaboration of states, federal agencies, tribes, stakeholders, and the public, from 2016–2022. The EPA worked together with states to develop the New Vision and six 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 EPA and states to better manage the program to achieve water quality goals. EPA 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.

In 2021 and 2022, EPA and the states worked together to update this "New Vision" approach for 2023–2032. While the wording may have changed slightly, all the concepts and functionalities of the original vision remain.

Initially, LDEQ identified seven priority watersheds under this New Vision approach in the 2016 IR. They were Tunica Bayou (070505), Bayou Sara (070501), Turkey Creek (080905), Yellow Water River (040504), Natalbany River (040503, 040507), Blind River (040401, 040403), and New River (040404). In an effort to optimize limited resources, LDEQ removed subsegment 080905 Turkey Creek from the list of priority watersheds in 2017 due to the limited access to the waterbody and uncertainties regarding loading sources.

EPA accepted the final restoration plan for the first priority watershed, Tunica Bayou, on October 5, 2020. LDEQ completed 19 months of monitoring in Yellow Water River by September 2019. Except for one site being monitored to guide restoration activities, monitoring for the Natalbany River was completed in March 2021. Watershed investigations of point and nonpoint sources as well as outreach and engagement activities are ongoing for both watersheds. A draft New Vision plan for Yellow Water River is currently under development. Watershed investigations for Bayou Sara were conducted in 2017 and 2018 and a draft New Vision plan is currently under development. LDEQ began monitoring New River in July 2021 and Blind River in February 2022. Monitoring in both watersheds is expected to 12 to 18 months.

There has been a long-term connection between the Section 319 NPS program and the CWA 303(d) programs. LDEQ remains committed to integrating across federal and state water programs, engaging the public and stakeholders, and adaptively developing, evaluating, and implementing TMDLs and TMDL alternatives to ensure strategic use of available resources to achieve water quality goals.

4.4 USDA-NRCS INITIATIVES

During FY 2022, LDEQ, LDAF and USDA-NRCS continued to coordinate efforts in watersheds prioritized through USDA's Mississippi River Basin Initiative (MRBI), NWQI and Gulf Spill Restoration Nutrient Reduction Projects (see Tables 8 – 10). Through the funding acquired from the USDA Farm Bill and Section 319, USDA and LDAF work with land owners and producers to implement agricultural BMPs through cost share agreements. LDEQ utilizes Section 319 grant funds for several contracts to aid in monitoring and assistance from partners. WS performs watershed assessment and characterization, pre-BMP sampling to collect baseline data used to determine critical areas for BMP implementation, and post-BMP sampling to determine the changes in water quality.

4.4.1 Mississippi River Basin Initiative

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 assists producers in improving nutrient management techniques above their current level to increase nutrient utilization. NRCS, SWCDs, and other partners develop targeted outreach plans to reach every producer within the watershed. Conservation planning and technical assistance are offered at no charge to help producers address the watershed goals and to improve water quality. In FY 2022, $437,691.96 dollars were obligated on 2,035.70 acres for MRBI in Louisiana (Table 8). These watersheds will have a 5-year project life.

Watershed	12-Digit HUC	FY22 Funds Obligated	FY22 Acres Obligated
Wildhorse Bayou Tensas River	080500030402	$ 157,779.00	1,050.80
Tiger Bayou	080402070301	$ 194,820.03	341
Baxter Bayou (East Carroll Parish)	080500020501	$ 85,092.93	643.9

Table 8: USDA – FY2022 Mississippi River Basin Initiative Watersheds

4.4.2 National Water Quality Initiative

The National Water Quality Initiative provides a way to accelerate voluntary, on-farm conservation investments and focused water quality monitoring and assessment resources where they can deliver the greatest benefits for clean water. NWQI has been extended through Fiscal Year (FY) 2023, with some updates to strengthen program delivery. Updates include a focus on watershed assessment and planning and including multi-year budgets to demonstrate long-term commitment in assisting water quality efforts. Louisiana implemented the NWQI project in the 2 watersheds below (Table 9).

Watershed	12-Digit HUC Name	FY22 Funds Obligated	FY22 Acres Obligated
Bayou Plaquemine Brule-Estherwood	080802010206	$11,989.00	64.2
Bayou Blanc-Bayou Plaquemine Brule	080802010208	$52,219.00	159.6

Table 9: USDA –NWQI Watersheds Approved for FY2022 Implementation

Louisiana was approved to begin the planning phase for the following watersheds in Morehouse parish (Table 10).

Watershed Name	Parish	HUC 12
Walkers Slough-Bayou Bartholomew	Morehouse	080402050802
Lower Overflow Creek	Morehouse	080402050805
White Oak Creek	Morehouse	080402050903
Outlet Chemin-a-Haut Creek	Morehouse	080402050905
Caney Bayou-Bayou Bartholomew	Morehouse	0804020511001
Cypress Bayou-Bayou Bartholomew	Morehouse	080402051002
Horse Bayou-Bayou Bartholomew	Morehouse	080402051003

Table 10: FY 2022 USDA – National Water Quality Initiative Watersheds Approved for Planning Phase

4.4.3 Natural Resource Damage Assessment Trustees – Nutrient Reduction (Nonpoint Source) Projects

Louisiana NRCS was awarded four Nutrient Reduction Projects from the Gulf Spill Restoration funding. The primary goal of these project themes is to improve water quality through nutrient reduction on agricultural lands. This includes targeting efforts for measurable impact by clustering projects at the HUC 12 watershed scale that directly impact coastal wetlands.

Landowners will participate on a voluntary basis in developing and implementing conservation plans to reduce nutrient and sediment runoff to improve water quality. Participants will receive technical and financial assistance to implement conservation practices according to NRCS standards and specifications. A monitoring and adaptive management plan will be implemented to document the relationship between implementation and load reduction.

- Project 1 – Nutrient Reduction on Dairy Farms in St. Helena and Tangipahoa Parishes for $1,500,000
- Project 2 – Nutrient Reduction on Dairy Farms in Washington Parish for $491,854.00 for 248.3 acres
- Project 3 – Nutrient Reduction on Cropland and Grazing Lands in Bayou Folse for $3,000,000

- Project 4 – Winter Water Holding on Cropland in Vermilion and Cameron Parishes Plus Ag BMPS for $3,500,000

4.5 WATERSHED COORDINATORS AND WATERSHED GROUPS

Watershed groups and WSCs continue to serve as valuable partners in implementing Louisiana's NPS program. In FFY 2022, LDEQ continued to collaborate with Capital RC&D, BTNEP, LRWA, and BVD. These partnerships accomplish several goals listed in Louisiana's NPS Management Plan including:

- 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 water quality changes; and
- Preparing success stories or identifying future actions needed to achieve success.

These WSC and watershed groups are dedicated to restoring and preserving the water quality in the areas where they live and serve.

4.5.1 Capital RC&D

Capital RC&D completed its "Nonpoint Source (NPS) Pollution Reduction through Enhancement of the On-Site Wastewater Disposal Systems (OSDS) Inspection, Educational Outreach, and Sampling" project in September 2022. The project targeted five watersheds: Yellow Water River, Comite River, Thompson Creek, Middle Amite River, and Natalbany River. These watersheds were listed on Louisiana's IRs as not supporting one or more designated uses of primary contact recreation (PCR), secondary contact recreation (SCR), fish and wildlife propagation (FWP), or Outstanding Natural Resource (ONR).

The goal of this project was to reduce NPS pollution with the objectives of improving surface water quality and restoring support for CWA designated uses, and maintaining healthy waters. This goal was accomplished by monitoring water quality to determine critical areas with high fecal coliform (FC) concentrations in the watersheds. These areas then became the focus of OSDS inspections to ensure properly functioning systems. Both Capital RC&D and partners worked together to accomplish the goals of the project. At the conclusion of the project, 2,882 OSDSs had been inspected. Of the 2,882 OSDSs inspected, 644 were found to be not working and 641 OSDSs were repaired/replaced. Capital RC&D estimated that a total load reduction of 12,179,000 colony-forming units of FC was achieved in the watersheds at the conclusion of the project.

Figure 1: Well-maintained, properly functioning home waste system aerator

Figure 2: Sewage overflowing from an improperly managed home waste system

Capital RC&D commented that there were challenges in the project, since it was conducted during Covid-19 (including the Delta variant) and Hurricane Ida. Through close communication with partners LDH, USEPA, and the LDEQ NPS unit, they were able to adjust work schedules and locations and make progress in improving water quality.

4.5.2 Barataria –Terrebonne National Estuary Program

BTNEP and LDEQ continued their partnership this fiscal year with the ongoing project: "Water Quality Sampling, On-Site Waste Disposal Systems (OSDS) Inspections and Educational Outreach in the Barataria-Terrebonne Basins." This effort supports watershed restoration in the Bayou Folse watershed under the Bayou Folse watershed plan, and supports NRCS, the Bayou Lafourche Freshwater District, and other cooperative work to address water quality issues in this subsegment.

Fish and wildlife propagation is impaired in Bayou Folse due to low dissolved oxygen, nutrients, and sediment. In addition, multiple sampling sites within the watershed show high concentrations of fecal coliform bacteria. The watershed implementation plan calls for addressing loading from malfunctioning home sewage treatment systems, also called onsite sewage disposal systems (OSDS), and from agricultural runoff. There are more than 4,600 OSDS in the Bayou Folse watershed, many of which are poorly or non-functioning. Additionally, runoff from pasture and cropland adds further loading of sediments, nutrients, and bacteria to Bayou Folse.

Past sampling allowed partners to map critical areas to target for NPS reduction measures, and current monitoring data tracks changes in water quality over time as partners work to restore water quality with education, conservation practice implementation, and outreach to address malfunctioning home sewage treatment systems.

Beginning July 1, 2022, sampling transitioned to a monthly rather than bimonthly monitoring regime, at ten locations in the subsegment. BTNEP conducted 20 sampling events that included measuring field parameters such as temperature, pH, and dissolved oxygen, and collecting grab samples for laboratory analysis of nutrients, sediment, and fecal coliform bacteria. Twenty velocity measurements were taken at the ambient water quality monitoring site to estimate flow.

Water quality education and outreach also continues, with BTNEP participating in more than 50 educational events in addition to home system education outreach. These events provide an opportunity for BTNEP to inform residents and other members of the public of water quality issues in Bayou Folse, nonpoint source pollution processes in general, and activities to reduce runoff pollution.

BTNEP oversaw OSDS inspections and outreach to homeowners in the subsegment. BTNEP outreach informs homeowners in the region about the importance of repairing malfunctioning home sewage treatment systems. BTNEP oversaw the inspection of 269 home treatment systems to determine operational status, need for repairs, and conduct homeowner education. The OSDS inspector then re-inspected 28 systems as a follow-up to determine repair status. Additionally, BTNEP received and implemented a Gulf of Mexico Program grant to cost-share necessary repairs with homeowners.

4.5.3 Bayou Vermilion District

BVD continued their OSDS inspections/re-inspections in the Lafayette area. Through their continued efforts, they have educated many residents on the dangers of malfunctioning systems through inspections, and follow-up inspections. This year BVD has worked on training new employees including wastewater operator certification, HAZMAT technician, and wastewater classes.

BVD conducted 723 new inspections as of October 2021. Of those, 284 passed the initial inspection and 208 failed. There were 231 follow-up inspections conducted. Of the follow ups 97 passed and 134 failed. This is equivalent to 58 percent of systems passing and 42 percent failing the initial inspection. Of the systems that received follow up inspections 42 percent passed and 58 percent failed. BVD continues to work with other agencies and environmental groups to raise awareness for increasing water quality in the Vermilion River watershed. BVD plans to work with LDH and the Office of Community Development to begin a pump out cost share program.

Bayou Vermilion District – Educational Inspection Program Progress Year 2022							
Month	**Total for Month:**	**Total Initial:**	**Initial Passed**	**Initial Failed**	**Total Follow-Up:**	**Follow-Up Passed**	**Follow-Up Failed**
Jan 22	0	0	0	0	0	0	0
Feb 22	13	3	3	0	10	3	7
Mar 22	33	20	9	11	13	3	10
Apr 22	24	17	10	7	7	4	3
May 22	44	33	11	22	11	3	8
Jun 22	39	23	16	7	16	10	6
Jul 22	39	13	12	1	26	13	13
Aug 22	28	20	10	10	8	6	2
Sep 22	36	27	19	8	9	7	2
Oct 22	38	23	10	13	15	9	6
Nov 22	30	21	13	8	9	3	6
Dec 22	55	35	17	18	20	3	17
Grand Totals:	**379**	**235**	**130**	**105**	**144**	**64**	**80**
Initial Inspections Passed:		**55.32%**					
Initial Inspections Failed:		**44.68%**					
Final Passed w/ Follow-Ups:		**51.19%**					

Table 11: BVD's inspections from January 1, 2021 through October 30, 2021

4.5.4 Louisiana Rural Water Association

The LRWA is a non-profit organization whose mission is to promote public health, assist operators of small water and wastewater systems through training, on-site technical assistance, and state operator certification necessary for promoting public health and environmental protection for the state of Louisiana. LRWA collaborated with LDEQ to conduct OSDS inspections and utilize focused/project-targeted workshops on an as-needed basis to improve water quality and restore designated uses to impaired watersheds. LRWA completed OSDS inspections in Calcasieu Parish and started OSDS inspections in Terrebonne Parish.

LRWA was able to raise awareness concerning the importance of maintaining home sewage systems and provide residents information regarding the importance of the proper operation and maintenance of their home sewer system through this door-to-door campaign. During each visit, the inspector discussed operation and maintenance practices, addressed homeowner's questions and provided a visual inspection of the system. When the homeowner was not present, the field inspector would leave an educational/informational brochure explaining the purpose of their visit and offered homeowner a sewer system inspection at no cost.

Public awareness of OSDS inspections and education was accomplished by distributing informational brochures at the city/town halls; notifying parish presidents by letter and/or phone calls and through public advertisements to draw interest to the local area activities and encourage participation. A summary of activities was given to the parish city/town hall once inspections were completed indicating progress made. This process could also be a vehicle to encourage the residents who were not originally on the LDH OSDS list and those who initially refused inspections to become proactive.

The inspector left brochures at 5,289 residences and was able to speak with 1,995 of the homeowners. This resulted in 1,977 inspections being conducted of which 1,955 of the systems were in great/good condition, 22 systems were either not operating or in decent/poor condition, and 18 homeowners refused the inspection.

Calcasieu Parish Inspection Results		
15,423	Total Homeowners to Visit	
1,995	Contacted/Spoke with Homeowners	
	1,977	sewer inspections conducted
	0	homeowners connected to city sewer
	18	homeowners refused inspection
1,977	Inspections conducted	
	1,955	systems in good condition
	22	systems not operating or in decent/poor condition
3,321	No contact made with Homeowners	
	3,294	no one home/distributed flyers
	0	homes vacant or abandoned
	0	homes with private roads or gated
	27	businesses/churches - not required to visit
	0	unable to locate
5,289	Total Flyers Distributed	
	3,294	no one home
	1,977	sewer inspections conducted
	18	homeowners refused inspection

Table 12: LRWA inspections from September 1, 2020– August 31, 2021

5.0 MEETING NPS MILESTONES

Louisiana's NPS Management Plan includes annual milestones. In FFY 2022, Louisiana's NPS program continued its focus on watershed planning, assessment, monitoring and implementation, in 20 waterbodies.

Basin	Waterbody	P	A	M	I	Subsegment	WIP	Success Story
Lake Pontchartrain	Comite River			✓	✓	040103		Submitted, Under Review
	Middle Amite River			✓	✓	040302		
	Yellow Water River			✓	✓	040504		Approved 2015
Mermentau River	Bayou Des Cannes			✓	✓	050101	Approved 2017	Approved 2019
	Bayou Mallet			✓	✓	050103	Approved 2017	Approved 2016
	Bayou Queue de Tortue			✓	✓	050501	Approved 2013	Approved 2018
	Bayou Chene			✓	✓	050603	Approved 2020	
Vermilion-Teche River	Bayou Courtableau	✓				060204		
	Bayou du Portage			✓	✓	060703	Approved 2019	
	Vermilion River	✓	✓	✓	✓	060801/060802	Approved 2021	
	Thompson Creek			✓	✓	070502		
	Big Creek (North)			✓	✓	080903	Approved 2019	
	Upper Bayou Lafourche			✓	✓	080904		
	Lake Providence			✓	✓	081101		Approved 2020
	Hemphill Creek			✓	✓	081609	Approved 2017	
Ouachita	Bayou Bartholomew	✓				080401		
	Lake St. Joseph	✓				081202		
Terrebonne	Bayou Folse			✓	✓	120305	Approved 2018	
	Bayou Grosse Tete	✓	✓	✓		120104	Approved 2022	
	Bayou Maringouin	✓	✓	✓		120111	Approved 2022	

Table 13: Activity in watersheds: planning (P), assessment (A), monitoring (M) and implementation (I) in FFY2022

5.1 WATER QUALITY IMPROVEMENTS

Louisiana's NPS Program continues to strive to make significant progress in partially or fully restoring NPS-impaired watersheds. Louisiana's NPS Management Plan's milestones include EPA water quality measure WQ-10 for water quality improvements. Measure WQ-10 requests states to report on the number of watersheds identified in 2000 or subsequent years as primarily impaired by NPS pollutants that have been partially or fully restored.

Statewide Milestones for Water Quality Improvement	2022
Number of waterbodies identified 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; review NPS related activities in watershed where water body was restored; write NPS success story; and identify activities to maintain water quality.	1
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.	8869.27
Estimated annual reductions in pounds of phosphorus from NPS to waterbodies (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.	1874.11
Estimated annual reductions in tons of sediment from NPS to waterbodies (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 annual report.	188.05
Number of NPS impairments removed from LA's IR: Annually review state IR for NPS impairments (DO, FC, 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 2016 IR.	1
Progress in reducing unliquidated obligations (ULO): Percentage of ULO funds anticipated yearly for LDEQ (total remaining funds/total awarded = percentage ULO).	32.24 %

Table 14: Statewide milestones for water quality improvement, based on LDEQ's 2020 IR

5.2 SUCCESS STORIES

A success story for the Comite River was written and submitted to USEPA Headquarters in Washington D.C. for approval.

Bacteria from improperly maintained septic systems led to a fecal coliform bacteria impairment in the Comite River (subsegment 040103 – From White Bayou to Amite River). The Louisiana Department of Environmental Quality (LDEQ) added the waterbody to the state's 2012 Clean Water Act (CWA) Integrated Report as not supporting its secondary contact recreation (SCR) designated use because of high bacteria levels. Beginning in 2012, the LDEQ contracted with Capital Resource Conservation and Development Council (CRC&D) to implement a series of initiatives such as home septic system inspections, education, and water quality monitoring in the Comite River subsegment. Recent data indicate that the river no longer exceeds the fecal coliform standard for SCR; as a result, LDEQ removed the waterbody's SCR bacteria impairment listing from the state's 2022 305(b) water quality assessment (Appendix A of the LDEQ Integrated Report of Water Quality in Louisiana).

6.0 STATEWIDE PROGRAMS

6.1 COASTAL NONPOINT POLLUTION CONTROL PROGRAM

The CNPCP is a cooperative effort spearheaded by LDNR OCM. In May 2022 NOAA and EPA submitted a letter stating Louisiana has satisfied all conditions of approval on its coastal nonpoint program developed under Section 6217 of the Coastal Zone Act Reauthorization Amendments.

OCM participates in all of the programs described below, and LDEQ participates in many of them. These programs are generally employed statewide, although some are focused on the coastal zone.

Hydrologic Modification Impact Analysis Success Story

As part of the review process of proposed projects located within the Coastal Zone of Louisiana, the Office of Coastal Management (OCM) evaluates potential impacts to the local hydrology. OCM utilizes the Hydrologic Modification Impact Assessment (HMIA) as a tool to evaluate if a proposed use would negatively modify the existing conditions, including the runoff flow volume and distribution, and the quality of water in the immediate and downstream areas of a project's location. During this past reporting period, an applicant submitted the proposed maintenance dredging of a portion of Bayou Terrebonne, near and in the City of Houma, LA. As part of this project, the applicant proposed to place the dredge material into a spoil disposal area. Through several communications with the applicant and revisions to the HMIA, the design of the spoil disposal area now includes a silting basin and a dredge slurry control structure that took into consideration the pre-existing local ditch and culvert drainage system capacity.

Reducing Flood Risk through Stormwater Projects

The Council on Watershed Management approved a plan which will dedicate $100 million in federal funds to a Design Support Program for 28 flood mitigation projects with another $100 million funding opportunity for local and regional projects. These flood mitigation efforts are targeted to implement flood risk reduction projects and programs to improve community flood resilience. Round one funding is focused on implementation-ready, low-risk programs and projects that address flood risk through a watershed-based approach. State project examples are: Ward Creak floodplain acquisition, Huffman Creek pump station and outfall improvements, East Slidell ring levee.

Louisiana Outdoors Forever

During the 2022 legislative session, the Louisiana House of Representatives and Louisiana Senate passed House Bill 762, establishing the Louisiana Outdoors Forever Program and Louisiana Outdoors Forever Fund. The purpose of this program is to provide funding for outdoor conservation projects in the State of Louisiana. The fund for the Louisiana Outdoors Forever Program provides $10 million in funding for the program's first year. Working through voluntary conservation measures, the program will help fund projects that protect drinking water supplies, conserve wildlife habitat, provide recreational opportunities in urban and rural areas, sustain working farms and forests, etc.

Jefferson Parish 22nd Annual Stormwater Poster and Essay Ceremony

The Jefferson Parish Department of Environmental Affairs announced the winners of the 2022 Non-Point Source Stormwater Pollution and Solutions Poster and Essay Contest, as well as the High School Sewer Science Program and the Stormwater Leadership Awards at a ceremony on May 6, 2022.

The annual Stormwater Pollution and Solutions Poster and Essay Contest was developed to raise public awareness of non-point source pollution, such as leakage of automotive fluids, fertilizers and pesticides, pet waste, green waste and construction runoff. The contest was open to Jefferson Parish students – third through sixth graders submitted posters, while seventh and eighth graders submitted essays – to depict or describe at least one source of non-point source pollution and potential solutions. New this year, the awards program included teachers who participated in the High School Sewer Science Project. This project is a week-long experiment designed to showcase the process of how the parish cleans and treats sewerage water. The program uses a scientific approach in an effort to increase awareness about water pollution and its impact on the environment.

Louisiana Master Farmer Program 2022

The Louisiana Master Farmer Program, a Louisiana State University AgCenter – led initiative that teaches about conservation, resource management, and publishes best management practices on coastal non-point pollution. The program graduated its 2021 class in April 2022. Eight Master Farmers were recertified during the meeting of the Louisiana Association of Conservation Districts. The recipients join the 353 that have been certified or recertified since 2006, and the program plans to continue its goal to lessen the environmental footprint left by agricultural operations, and ensure opportunities for future generations.

To become a Master Farmer, participants must attend educational sessions about environmental stewardship and develop plans for implementing conservation practices on their farms. To maintain the Master Farmer designation, they must meet continuing education requirements and periodically be recertified.

Louisiana Outstanding Master Farmer Dwayne Compton is a rice and crawfish producer in Jefferson Davis Parish and has been an active member in his community for more than 30 years; advocating for improving water quality, soil sampling and nutrient management.

Outreach and Education

OCM representatives regularly participate in the many educational outreach events throughout the year; staff participated in the Ascension Parish career fair for eighth through twelfth grade students, and Louisiana Department of Wildlife and Fisheries Hunting and Fishing Day. Both events OCM staff demonstrate and discuss the importance of coastal wetlands and their benefits to communities.

BTNEP

The OCM sits on the management conference for the BTNEP. The BTNEP became recognized in 1990 as one of 28 National Estuary Programs through the United States, and it works to protect and preserve the culture and land located between the Mississippi and Atchafalaya Rivers in Southeast Louisiana. The management conference originally convened in 1990 to develop the Comprehensive Conservation and Management Plan (CCMP), and it evolved to become an arena for producing open and frank discussions about some of the most critical coastal management issues. During this review cycle, BTNEP has been awarded $4.5 million from the bipartisan infrastructure law to spend on projects addressing habitat protection, restoration, climate change mitigation, and/or environmental justice issues.

Litter Abatement and Beautification Task Force Kicks Off

The state established a Task Force on Statewide Litter Abatement and Beautification, administered by the Lieutenant Governor's Office and Keep Louisiana Beautiful. The group is made up of 26 Task Force members — representatives from various state and local government agencies, businesses, private groups, and communities – dedicated over 400 hours to developing eight recommendations for tackling litter in Louisiana:

1. Establish Fundamentals to Sustain Litter Prevention and Beautification Efforts
2. Raise Public Awareness
3. Build Knowledge through Training and Education
4. Advance Youth Education to Create a Culture of Cleanliness
5. Strengthen Litter and Illegal Dumping Enforcement Efforts
6. Improve Waste Disposal Practices and Recycling Opportunities
7. Expand Litter Prevention and Removal Initiatives
8. Support Beautification and Community Appearance Enhancement

Along with these recommendations, 47 key priorities were proposed and adopted, one of which is to conduct a comprehensive litter study to measure quantitative and qualitative data such as litter locations, quantities, and sources; public perceptions and attitudes; and the present costs associated with litter abatement.

Geauxing Green for the 2022 French Quarter Festival

French Quarter Festivals, Inc. (FQFI) announced that organizers were able to increase overall waste diversion by more than 25% in comparison to the 2019 Festival with the addition of composting, glass recycling, donations and upcycling. In 2022, recycling efforts amounted to 30,000 pounds of recycled waste, a 119% increase from 2019 with 13,500 pounds.

The Geauxing Green Initiative worked with 200 "Green Team" volunteers and crew, as well as several local companies to execute its mission. During the Fest, 130 reusable waste bins were placed throughout major festival sites. In addition to educating the general public on how to properly dispose of their waste, the event's 55 food vendors were required to utilize only compostable serving materials and no styrofoam was allowed on site. Organizers diverted thirty-six thousand pounds or 18 tons, which is approximately

the weight of three adult elephants, to The Composting Network to make garden soil. Twenty-nine thousand and five-hundred pounds, or 15 tons which is equivalent to the weight of 3,000 gallons of paint, worth of plastic, aluminum, and paper were diverted from landfills and recycled with the help of Waste Connections. Nine thousand pounds, nearly 5 tons, of glass was diverted to Glass Half Full for making sandbags for coastal storm defense. 1,000 pounds of French Quarter Festival signage will be repurposed for Mardi Gras floats, student projects and re-used for the 2023 festival April 13-16. FQFI looks forward to increasing diversion percentages for their 2022 and 2023 events. The discovery from the events will aid BTNEP in developing a "Sustainable Festival Planning Guide" for the Environmental Protection Agency's Gulf of Mexico Division, which will offer guidelines and instructions to other communities from pre-event actions to post-event actions.

Pollution Reduction in Rivers and Streams

Livingston and East Baton Rouge parishes will share the cost of cleaning debris from the Amite River. Additionally East Baton Rouge and the city of Central are partnering cleaning debris from the Comite River. These cooperative agreements allow for cost sharing with FEMA, and will help to reduce flooding impacts.

6.2 DRINKING WATER PROTECTION PROGRAM

Background

Congress mandated each state implement a Wellhead Protection Program (WHPP) that protects public water wells and a Source Water Assessment Program (SWAP) to assess potential susceptibility to contamination of all water sources utilized for drinking water supplies. The Drinking Water Protection Program (DWPP), which is what LDEQ calls its source water protection program, combines the efforts of the WHPP and SWAP to prioritize protection activities. In accordance with Federal Register; Volume 68:205, LDEQ has included source water protection as part of its NPS program. The source water protection staff assists Louisiana's communities in protecting aquifers and surface waters (rivers, lakes, etc.) that are sources of drinking water.

The DWPP uses the State fiscal year (July 1 through June 30) for its calendar of assessment and protection activities and in all previous state fiscal years the DWPP targeted protection activities by the state's parish jurisdictional boundaries. However, in July 2020, the DWPP began prioritizing target areas by watershed drainage basins. Federal fiscal year 2020 was a transition period that included protection activities in both the targeted parishes and from targeted watershed drainage basins. Protection activities implemented in targeted watersheds are comparable to parish-based activities and are outlined under Program Element 2 of Louisiana's FFY 2022 319 CWA Nonpoint Source Work Plan.

Drinking Water Protection Activities

Target areas for this reporting period were the Lake Pontchartrain Basin, the Mississippi River Basin and the Pearl River Basin. Protection activities include, but are not limited to, updating source water assessment information, contingency planning, introduction of a model ordinance, public education and

addressing specific issues. These activities may also occur outside of targeted basins shown in the map below if an opportunity to do so presents itself or if the need arises.

Target Watersheds

All source water protection information for public water supplies in the targeted watersheds will be updated according to the schedule in Table 15 below. The table also shows the number of wells and intakes scheduled for source water assessments. Source water assessment information is confirmed with the public water systems and, if required, updated contingency plans are prepared for each water system serving a population of 3,300 or fewer. Water systems serving populations exceeding 3,300 are required to develop or update risk assessments and emergency response plans under the American Water Infrastructure Act of 2018 and must certify completion to EPA. DEQ coordinates with the Louisiana Rural Water Association to provide assistance with these assessments and plans. The actual numbers for the source water assessment work accomplished within the watersheds for this reporting period are included under the Source Water Assessments section below. Thirteen contingency plans were updated during this reporting period. As this work continues, if a specific issue involving public water sources needs to be addressed or if any public education opportunities arise, the DWPP staff will respond as needed.

Louisiana Source Water Protection Area Watershed Basin Plan				
Fiscal	**Basin**	**Number Of: Wells**	**Intakes**	**Drinking Water Bodies**
Years Wells Intakes 2021 - 2025	Pontchartrain	623	0	N/A
	Pearl	101	0	N/A
	Mississippi	92	0	N/A
	3	816	0	N/A
	Vermilion-Teche	555	3	Bayou Teche & Grand Lake
TOTAL	**4**	**1,371**	**3**	

Table 15: Louisiana Source Water Protection Area Watershed Basin Plan

Source Water Protection Program Schedule

Figure 3: Source Water Protection Program Schedule

Source Water Assessments

During implementation of the DWPP source water assessment data are updated. The staff obtains GPS coordinates for new water wells and intakes and well photographs are taken for ease of identification. A protection area is delineated for the well or intake and GPS coordinates are obtained for all SPSOCs identified within the protection area. Additionally, protection areas for wells and intakes already in the SWAP database are resurveyed to update SPSOC information and new photographs of wells are taken. Wells or intakes that are no longer in service are removed from the inventory along with their corresponding protection areas and SPSOCs. Applications developed to capture the data via mobile devices are used to update the database in real time.

During this reporting period, source water assessment data were collected for 217 public water sources and 1,023 SPSOCs. Updating this data is important because LDEQ and other agencies use it for pollution prevention, emergency response, and environmental investigations. The data are also used to generate source water assessment reports for public water supply systems. The Safe Drinking Water Act Consumer Confidence Report rule requires that all public water supply systems have a copy of their source water assessment report available for review by the public.

The SWAP Calculator program generates new source water assessment reports based on existing data and new data collected with mobile data collection applications. The reports contain basic well/intake information such as age, depth, aquifer/water body, delineated protection areas, SPSOCs, and a risk ranking for the water system.

Recent database and software upgrades impacted the functionality of the SWAP Calculator and during FFY2020 the program was completely redeveloped. The new SWAP Calculator program not only generates SWAP reports but also significantly improves the functionality of the program by automating data collection and report generation processes. During this reporting period 115 source water assessment reports were generated.

Public Education

Public education is one of the main elements of the DWPP and there were various opportunities to inform citizens about drinking water source protection in both targeted and non-targeted areas. DWPP staff gave presentations or worked booths at the following locations/events; LRWA Management Conference, LRWA Annual Conference, Oil City – Caddo Lake Area Community Meeting, Bains Elementary and the LSU Ag Center in Farmerville. DWPP staff reached more than 1,600 people during this reporting period.

Bayou Lafourche

Work to mitigate improperly treated sewage flowing into Bayou Lafourche from individual sewage treatment systems continued during this reporting period. DEQ coordinated with LSU Ag Center to develop and administer a survey to determine the willingness to pay for installation of a community sewage treatment system for Nolan Toups Subdivision near Lockport, LA. A survey went out in the mail and on social media. Classes on home sewage treatment system maintenance will be conducted locally where attendees will have the opportunity to express their opinions on how to best handle the sewage problem in their neighborhood. It is hoped that this pilot project will prove to be a useful litmus test on how to handle the sewage issue in other areas along Bayou Lafourche.

Hurricane Assessments

DWPP staff routinely participates in LDEQ's environmental damage assessment response to catastrophic storms in areas impacted by storm surge, specifically in source water protection areas. These assessments are provided to DEQ's Incident Command so that the proper personnel could respond to any required follow up work. In addition to environmental damage assessments, the DWPP staff also assesses surface water quality in sources of drinking water impacted by hurricanes. The DWPP staff was chosen for this task because it is the only unit in the state that is tasked with water quality protection of sources of potable water, i.e. the aquifers and surface water sources. During this reporting period, no hurricane assessments were required.

6.3 STATEWIDE ONSITE DISPOSAL SYSTEM PROGRAM

Many of Louisiana's watershed impairments are caused by high concentrations of FC. The state's numerical criteria for FC for designated uses can be found in Table 17.

Designated Use	Louisiana numerical criteria
Primary Contact Recreation	FC: 400 CFUs/100 mL (May – Oct)
Secondary Contact Recreation	FC: 2000 CFUs/100 mL
Public Water Supply	FC: 2000 CFUs/100 mL
Oyster Propagation	FC: 14 CFUs/100 mL

Table 16: The State's numerical criteria for FC for designated uses

LDEQ, WSCs, and watershed support groups continued to partner with LDH and the parish and/or local governments in developing education and outreach programs and assist in inspecting OSDSs located in priority watersheds. Table (18) depicts the watersheds and partners involved in OSDS inspection projects.

Watershed	Project Summary
Comite River (040103)	In FFY2022, Capital RC&D conducted individual home sewage inspections. Monitoring was conducted by LDEQ Water Surveys personnel. Monitoring and inspections will continue into 2023.
Yellow Water River (040504)	In FFY2022, Capital RC&D conducted monitoring and individual home sewage inspections. Monitoring and inspections will continue into 2023.
Middle Amite River (040302)	In FFY2022, Capital RC&D conducted monitoring and individual home sewage inspections. Monitoring and inspections will continue into 2023.
Thompson Creek (070502)	In FFY2022, Capital RC&D conducted monitoring and individual home sewage inspections. Monitoring and inspections will continue into 2023.
Vermilion River (060801)	In FFY 2022, BVD and LDAF conducted home sewage inspections. LDEQ Water Survey's continues conducting monitoring.
Bayou Folse (120302)	In 2022, BTNEP continued water quality monitoring and education-outreach. Through local partnership, in August 2020 BTNEP began inspecting home sewage treatment systems to assure proper functioning. This effort will continue into 2023.
6217 Coastal Management Area in Coastal Louisiana	In FFY2022, LDEQ-NPS continued its partnership with LRWA and conducted OSDS inspections; and utilized focused/project-targeted workshops on an as-needed basis. This effort will continue into 2023.

Table 17: OSDS inspection projects

Evaluation of continuing inspections in the watersheds will be made based on water quality data obtained from the ambient water quality network sites in each subsegment. Criteria for the designated uses will be used to determine whether NPS bacteria are being reduced and progress is being made towards meeting water quality standards in each subsegment.

7.0 OUTREACH AND EDUCATION ACTIVITIES

LDEQ, partners, and WSCs, all worked together to conduct education and outreach across the state. Each department realizes the importance of sharing our findings and continued education of the public to promote watershed restoration. LDEQ participated in five outreach and educational events across the state this fiscal year. These events targeted people of all ages. The Enviroscape model/video allows viewers to see how water moves through an array of landscapes, from urban to agricultural, illustrating the interconnectedness of our waterways and the transportation of NPS pollution. In FFY 2022, LDEQ reached over 6,600 adults and students through the following events:

April 1, 2022

Saints and Pelicans STEM Fair, sponsored by Chevron: DEQ Outreach and Small Business Assistance Staff and NPS staff participated in this STEM fair. Approximately 2,500 students from the Greater New Orleans area attended as support organizations shared their time and expertise with the community. LDEQ NPS staff demonstrated runoff processes using the Enviroscape Model.

April 7, 2022

First Baptist School, Lafayette: LDEQ NPS staff visited First Baptist Christian School in Lafayette to talk about nonpoint source pollution. Using the Enviroscape model, the second graders learned about the impact that nonpoint source pollution can have on the environment.

Figure 4: LDEQ Scientist India Ambeau demonstrates the Enviroscape to second graders at First Baptist Christian School.

April 21, 2022

LACD Meeting – Project WET Certification, presented Enviroscape: LDEQ NPS staff participated in the Project WET certification workshop at the Louisiana Association of Conservation Districts' annual meeting. The workshop was designed to certify participants to hold workshops where they can teach environmental activities to other environmental educators.

Figure 5: LDEQ Scientist India Ambeau demonstrates the Enviroscape at the Project WET Certification Workshop

Figure 6: LDEQ Scientist India Ambeau participating in STEM Fest

Figure 7: LDEQ Scientist Rhyshima Parms-Green discusses methods to reduce NPS runoff at the Louisiana Hunting and Fishing Day

August 26, 2022

STEM Fest SELU: Nearly 2,000 students and adults, along with almost 50 organizations participated in the 4th annual STEM Fest at Southeastern Louisiana State University in Hammond. LDEQ NPS staff used the Enviroscape model to demonstrate how NPS enters the environment, subsequently traveling in other areas that can ultimately harm ecosystems and communities.

September 24, 2022

National Hunting and Fishing Day: LDEQ NPS staff participated in the 2022 Louisiana National Hunting and Fishing Day at Waddill Wildlife Refuge in Baton Rouge. The event is an annual forum for participating organizations to provide outdoor recreation-related educational activities and exhibits. LDEQ staff used the opportunity to educate local children on methods to reduce NPS pollution. Staff provided promotional items as incentives for learning the methods, which included picking up pet waste, reducing the use of fertilizers and pesticides, washing cars on grass instead of concrete and bagging grass clippings as opposed to blowing them into storm drains.

Additional outreach included the following: DWPP staff gave presentations or worked booths at the following locations/events; LRWA Management Conference, LRWA Annual Conference, Oil City – Caddo Lake Area Community Meeting, Bains Elementary and the LSU Ag Center in Farmerville. DWPP staff reached more than 1,600 people during this reporting period.

8.0 TRAINING

The following describes selected training events attended by NPS staff. Due to COVID-19 and the governor's stay-at-home order, staff attended far more recorded webinars than usual. As a result, this training list is partial, representing the most relevant educational events attended this fiscal year.

NONPOINT SOURCE POLLUTION TRAINING

Working With Nature Training Series (Louisiana Watershed Initiative webinar series)

- Module 1 Introduction to working with nature and Vermilion River case study, October 20, 2021;
- Module 2 Designing with nature-based solutions in rural areas and open space. November 17, 2021;
- Module 3 Designing with nature-based solutions in urban areas. December 15, 2021;
- Module 5 Development regulations and incentives for nature-based solutions, March 16, 2022;
- Module 6 Valuing nature-based solutions: The cost-benefit analysis, April 21, 2022.

EPA Water Quality Modeling Series (EPA webinar series)

- Reproducible Workflows: Moving from Spreadsheets to Coding, May 24, 2022;
- Processing Water Quality Portal data in R, June 21, 2022;
- Processing USGS Streamflow data in R, July 19, 2022;
- Processing NOAA Weather data in R, August 16, 2022.

Individual Training Sessions

October 25, 2021
Climate Change 2021: A summary of the IPCC's 2021 Physical Science Basis Report (Purdue University webinar)

November 2, 2021
Navigating Federal Funding for Green Infrastructure and Nature-Based Solutions: This EPA webinar featured speakers from multiple federal agencies including FEMA, NOAA, USACE, and EPA discussing federal programs that provide funding and technical assistance to advance green infrastructure and nature-based solutions.

November 3, 2021
Complexities in Predicting Harmful Algal Blooms (University of Wisconsin webinar)

November 16, 2021
Resilience of Ecosystems in a Changing Climate (EPA Air, Climate, and Energy Research Webinar Series): This webinar highlighted the following ongoing research: (1) upgrading EnviroAtlas; (2) understanding fish populations and future environmental change, and water and watershed; and (3) advancing the Cumulative Resilience Screening Index.

November 18, 2021
The World of Waste: Part 2: This session provided an overview of the LDEQ Waste Permits Division. Topics included recycling and waste tires -including permitting, licensing, fees, generators, transporters, processors, recycling and cleanups.

November 18, 2021
USDA NRCS Conservation Stewardship Program (CSP): This virtual workshop provided an overview of the Conservation Reserve Program.

December 8, 2021
Promoting Community Resiliency through Social Science: This webinar discussed how EPA researchers used social science practices from human-centered design and disaster anthropology to develop a website containing short, how-to videos based on technical guidance on how members of the public can safely re-enter their home, remove contaminated materials, clean it out, and begin repairs.

January 12, 2022
Emerging Contaminants: A Look at Microplastics: The North Central Region Water Network presented this webinar on microplastics and on-going research on pathways into waterbodies and the effects on the ecosystem.

March 9, 2022
Communicating Conservation to Landowners: Part of the North Central Region Water Network's "The Current Webinar Series", this webinar covers lessons on communication with producers and non-operating landowners.

March 10-11, 2022
2nd Annual Lower Mississippi River Science Symposium: The Tulane Engineering Forum presented this two-day symposium on flow and nutrient modeling, water quality, ongoing projects, and sediment considerations in the Mississippi River.

March 15, 2022
Grassland 2.0 Digital Dialogue: The Yahara WINS project: Past, Present and Future

March 21, 2022
Nutrient Tracking Tool workshop: USDA and Tarleton State University provided a workshop on the potential use of the Nutrient Tracking Tool for water quality trading, planning, assessment, outreach, research, and other applications.

March 31, 2022
Economics of Regenerative Soil Health Systems for Cotton: The Soil Health Institute presented results from Economics of Soil Health Management Systems on Five Cotton Farms, where researchers interviewed five cotton farmers who have successfully implemented soil health systems and assessed the economic and productivity changes they experienced by improving soil health.

April 13, 2022
Source Water Protection: This University of Wisconsin webinar provided an overview of the Source Water Collaborative, how Kansas protects drinking water through improved soil health, and how extension works with communities on source water protection planning.

April 21, 2022
Using Geospatial Indicators of Watershed Condition to Support Freshwater Conservation Actions: This EPA webcast covered watershed-based metrics to characterize watershed conditions in the nation's streams and lakes available from the StreamCat and LakeCat. Metrics included predicted water temperature, predicted biological condition, and the index of watershed integrity.

April 25, 2022
Strength in Numbers – Assessing the impact of new and emerging field crop diseases: (Purdue University webinar).

April 26, 2022

EPA ORD Webinar – Source Water Protection and Harmful Algal Blooms: This presentation introduced molecular monitoring approaches used in the detection and quantification of cyanobacterial groups and cyanotoxin genes implicated in harmful algal blooms. This presentation also discussed occurrence, distribution, temporal-spatial variations of cyanobacteria, especially toxin-producers, and use as early warning systems for cyanotoxin production.

May 3, 2022

Grassland 2.0 Digital Dialogue: Cows, Corn, and Crap – Climate Change and Agriculture

May 11, 2022

2022 EPA Nonpoint Source Success Story Training: This webinar covered components of EPA Nonpoint Source Success Stories, the Grants Reporting and Tracking System (GRTS) database, and reviewed how to enter a Success Story in GRTS.

May 18, 2022

Piloting 3D Hydrography: USGS Objectives and Activities: This USGS and NSGIC webinar provided an overview on the new 3DHP structure, goals, and progress toward an improved national hydrography dataset.

May 23, 2022

Conservation Buffers: Sink or Source Habitats for Fish-Wildlife?: This USDA NRCS webinar discussed how conservation buffers' roles as source or sink for wildlife depends on objectives and the scale of assessment.

May 25, 2022

ATTAINS 101: This EPA webinar provided an overview of ATTAINS, including accessing the database, roles, the user interface, data, reports, and the" How's My Waterway" application.

May 26, 2022

CWA 303(d) Program 101: This monthly Watersheds Committee call included a CWA 303(d) Program 101 webinar and lead-in for the2022 national 303(d)/TMDL Training Workshop.

May 31 – Jun 3, 2022

2022 National Training Workshop on Water Quality Data, Assessment, and Plans: This virtual workshop featured sessions on the CWA 303(d) Program Vision, addressing climate change, data resources, the Internet of Water, environmental justice, and breakout sessions (attended GIS and TMDL-related breakouts).

July 11-15, 2022

ESRI User Conference (virtual)

July 20-21, 2022

Hazard Mitigation and the CWA 303(d) Program: Opportunities for Integration: This follow-up workshop to EPA's 2022 National Training Workshop on Water Quality Data, Assessment, and Plans covered FEMA funding and incentive programs that may be leveraged for water quality management and hazard mitigation work, including planning connections, funding alignment, co-benefits, examples, and next steps.

August 24, 2022

EPA ORD Water Research Webinar – Integrated Approaches in Community Nonpoint Source Nutrient Management.

August 29, 2022

Managing nutrients and water in a changing climate: Webinar presented by Purdue University.

Nonpoint Source

PROGRAM