

Mississippi's Nonpoint Source Management Program



2017 Annual Report



MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY

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NPS PROGRAMS

1. Statewide NPS Program Administration

The Mississippi Department of Environmental Quality (MDEQ), Office of Pollution Control (OPC) serves as the lead agency in Mississippi for water quality management. Therefore, OPC is responsible for the development and implementation of the State's NPS Management Program. To do this, OPC performs several key administrative functions to ensure statewide implementation of NPS initiatives. Specifically funding under this element supports oversight and management of the NPS and Basin Management Programs within the Surface Water Division (SWD) at MDEQ by providing partial funding of the SWD Chief, full funding of the Basin Management and NPS Branch Chief, and partial funding of an Environmental Administrator position to help manage the NPS grants, develop reports, maintain budget records, manage subgrant agreements and track invoices.

Long Term Goals Supported:

Long Term Goals: See goals 1, 2, 10, 12, 13, and 14 within the current 5-Year NPS Management Plan.

2. Statewide NPS Program Implementation

The Office of Pollution Control (OPC) Surface Water Division coordinates the statewide NPS Program and funding under this element supports the staff that implement this program and the elements that follow.

Education and Outreach

A primary objective of the Statewide NPS Program is to increase public awareness of nonpoint source pollution and ways to reduce its impacts at the individual, community and watershed levels. Targeted audiences include private citizens, teachers, students, scout troops, civic leaders, contractors, farmers, urban neighborhood groups, civic organizations, lake community groups, environmental groups, foresters, and government resource agencies. To increase participation in program activities, funds may be allocated to procure refreshments and facilities for meetings with our target audiences as needed. Described below are routine programs/activities implemented as part of the statewide NPS focused education and outreach program during FFY 2017:

Environmental Teacher Workshops

Teacher workshops are a major component of MDEQ's NPS education program each year. The teacher workshops include interactive classroom activities and field trips with some of the best environmental/natural resource speakers in Mississippi instructing the classroom teachers and environmental educators. During FY 2017, thirty-two (32) teacher workshops were held in all regions of Mississippi with approximately 700 educators participating. Educators were provided Continuing Education Units (CEUs) ranging from 0.5-3 CEUs per workshop. These workshops include sessions on water quality, NPS pollution prevention, green infrastructure, low-impact

development, water chemistry, benthic macroinvertebrate community measures, and hands-on, water related activities. Educators can use all the information provided in these workshops to teach students about natural resource stewardship. In addition, the NPS program assists with workshop support for the following curricula: *Project Learning Tree*; *Project WET*; *Project WILD*; *Project Aquatic WILD*; *Project Food, Land and People*; *Private Eye*; and others. These projects were completed on schedule and within budget.

Make-A-Splash Event

The *Make-A-Splash, A Water Education Event* is held each September at the Mississippi Museum of Natural Science in Jackson, Mississippi where students visit up to 20 water-related interactive booths and guided museum exhibits to learn about polluted runoff, wildlife, water use, groundwater, surface water, macro-invertebrates, etc. At the September 2017 event, seven schools attended with a total of 605 students participating. This project was completed on schedule and within budget.

Envirothon

The Annual Envirothon High School Competition tests student knowledge about water and aquatic ecology, soils and land use, forestry, wildlife and current environmental issues. The focus in 2017 was “Agricultural Soil & Water Conservation Stewardship”. The competition measures success by students’ oral presentations to a panel of judges. Each team applies gained knowledge and field experiences to a real life environmental problem/situation. In addition, both written and hands-on field tests in each of the five topic study areas are administered. The Mississippi competition is sponsored by MDEQ’s NPS Program and the Mississippi Association of Conservation Districts and is coordinated by the Mississippi Soil and Water Conservation Commission. In 2017, three hundred nine (309) high school age students (53 teams) and their advisors participated in four area competitions. A total of 105 of these students (21 teams) advanced and participated at the state level competition which was held at the FFA Center in Raymond, Mississippi on April 28th, 2017. The team from Oxford High School won the State Competition and competed at the NCF Envirothon representing Mississippi on the International level. The NCF event was held at Mount Saint Mary’s University in Emmitsburg, Maryland on July 23-29, 2017. Mississippi placed sixth out of 54 teams from North America and China. This project was completed on schedule and within budget.

Project Learning Tree

Project Learning Tree workshops and training activities create an awareness of nonpoint source water pollution that will lead to habit and behavior changes to improve water quality in Mississippi. The Mississippi Forestry Foundation assists MDEQ’s Nonpoint Source Pollution Education Program with the conduct of *Project Learning Tree* environmental education workshops, training, and meetings. During FY 2017, 16 workshops were held across the state with 293 teachers in attendance. This project is on schedule and within budget.

Summer Ecology Day Camp

During 2017, the NPS program sponsored five (5), one-week summer-camp sessions at the *University of Mississippi Center for Water and Wetland Resources* where 66 students were trained. These camps train students on environmental topics such as water quality, land use, forestry, wildlife, and NPS pollution. A pre-test/post-test method is used to measure increased

knowledge as an indicator of program success. This project was completed on schedule and within budget.

Additionally, NPS presentations were made at several summer camps/after-school programs such as:

St. Andrew Episcopal School

St. Andrew Episcopal School hosted its 2017 summer Water Week educational event for approximately 200 students and teachers. The objective of the event was to teach children about the importance of conserving and protecting water resources. It also focused on teaching them how to be good environmental stewards. Students learned about how Nonpoint source pollution enters the environment and what they can do to help reduce it using the NPS EnviroScape Watershed model. Students learned about the water cycle through an interactive game called Incredible Journey. In addition, students also participated in the stream table demonstration that simulates river formations and how man-made structures and human activities can affect river systems.



Summer Eco-Ambassador Camp with Keep Jackson Beautiful

Approximately 50 students and AmeriCorps sponsors were educated on Nonpoint source pollution and water quality at the 2017 Eco-Ambassador Camp hosted by Keep Jackson Beautiful. The Eco-Ambassador Camp is designed to reconnect youth to nature, facilitate the development of environmental stewardship through an innovative earth-based program and to provide them with the resources necessary to implement and produce creative and environmental solutions. Students that participated also learned the fundamentals of environmental literacy; preserving and sustaining the natural and built environment; the benefits of recycling; the effects of climate change; the importance of health, food and agriculture; and related career paths.

Education and Outreach for Future Educators at Mississippi College

In the Department of Teacher Education at Lowry Hall on the campus of Mississippi College, 32 students and teachers were educated on environmental issues including water quality, air quality, composting, recycling, waste and other natural events that impact our environment. The future educators participated in discussions about environmental issues impacting our world. Students also had an opportunity to participate in the interactive EnviroScape Watershed/Nonpoint Source model that demonstrated the sources and effects of water pollution and ways to prevent it. The class also observed a presentation of a Groundwater Model that depicts the flow of water and pollutants through confined and unconfined aquifers as well as the effects of pumping pressure on these aquifers.

Environmental Education and Outreach Mobile Classroom

The Environmental Education Mobile Classroom is a multi-media, water quality unit study that utilizes audience participation, music and theater to engage and enlist students and adults in taking personal responsibility for water quality stewardship. This sixty-minute, interactive program aligns with the Mississippi Curriculum Framework for grades 3-6 and travels to schools, educational and public events located in priority watershed areas statewide. The Mobile Classroom reaches thousands of people annually. A Water Quality Steward Study Guide is a companion unit study to the Mobile Classroom. It includes free downloadable access to more than 100 pages of lessons, activities, labs, vocabulary, games, reviews, quizzes and answer keys.



Adopt-A-Stream

Adopt-A-Stream is an environmental education training program for adults and students that focuses primarily on aquatic ecosystems and the effects of NPS pollution on water quality. During 2017, a 2-day workshop and ten 1-day workshops were conducted. In these, 195 adults were taught water-quality subjects. These workshops were conducted in the major watershed basins of Mississippi, i.e., Yazoo River, Tombigbee River and the Pascagoula River. The coordinator for *Adopt-A-Stream*, through a subgrant that MDEQ has with the Mississippi Wildlife Federation (MWF) provided other water-quality training in 2017. This training included: educating citizens about water-quality issues and solutions in their own local watersheds; conducting *Envirothon* team training for 266 high school students on 39 teams on aquatic subjects; presenting 31 aquatic-ecology programs for 739 students in classrooms; leading one stream clean-up and one recycle event and; reaching over 5400 people through 11 large-venue events and displays at conferences and similar events. This project is on schedule and within budget.

In addition to the activities mentioned above, and to better support MDEQ's focus on strategic nutrient-reduction activities, the Statewide NPS Education and Outreach Program was expanded to include the following program:

Mississippi Statewide Forestry Water Quality Protection Program - The Mississippi Forestry Commission (MFC) evaluates the implementation and use of voluntary Best Management Practices for forestry activities throughout the state of Mississippi. By monitoring these voluntary practices on a continuous cycle and widely distributing the results, best management practice implementation rates will increase. The MFC works with other forestry related groups in promoting water quality within the State and implements monitoring of Best Management Practices, conducts educational workshops, and distributes outreach materials. This project was completed on schedule and within budget.

Agricultural NPS Implementation Assistance – MDEQ’s Nonpoint Source Management Branch needs assistance to implement educational and demonstration projects in conservation districts. The Mississippi Soil and Water Conservation Commission (MSWCC) supports the NPS program by providing assistance to conservation districts to implement the aforementioned projects. Funds are used to support staff time. Projects that MSWCC has been involved with include Envirothon, Tarebreeches Creek-Tuscumbia River Canal, Bell Creek-West Prong Muddy Creek, Little Topashaw Creek, and Jasper Creek. These projects will improve water quality through the reduction of nonpoint source pollution from agricultural and urban sources by promoting the use of best management practices. This project was completed on schedule and within budget.

Long Term Goals Supported:

Long Term Goals: See goals 1, 2, 3, 4, 5, 9, 10, 13, and 14 within the current 5-Year NPS Management Plan.

3. NPS Watershed Planning

MDEQ’s Basin Management Approach supports planning efforts for the NPS program. As part of planning efforts, staff conduct basin team meetings to target watersheds for implementation plan development. To develop fully-approvable 9 Key Element watershed based plans, the pollutant, or primary cause of impairment, needs to be identified. Sampling of biological community data and stressor identification play important roles in this process and provide the information necessary to develop TMDLs and to fully answer the questions in 9 Key Elements.

During FY 2017, the Basin Management Branch worked with stakeholders and Basin Team members to update the process by which external input can be received by MDEQ and used in the ranking process to determine priority watersheds for 9 Key Element watershed plan development. Using the established MS Watershed Characterization and Ranking Tool (MWCRT), the priority watersheds as identified in the NPS management plan were ranked within each basin group using the metrics identified in the MWCRT. Once this task was completed, the sub-watersheds were further prioritized using additional GIS data layers that can help further refine the stressors in the watershed to identify those watersheds that are impacted by NPS sources of pollution, those with TMDLs/impaired waters, those with monitoring information, those without major NPDES dischargers, etc. Once this exercise was completed, the top 15 watersheds in each Basin group were selected. In order to provide this information to our stakeholders, MDEQ developed a GIS web-based map application that could be provided via a link and accessed either by phone, tablet, or computer. On this map, the basic information was provided for each sub-watershed including its rank based on the MWCRT out-put, the HUC number, monitoring station information, TMDL information, ecoregion, watershed size, Basin contact, etc. Also, as an added benefit, the application allowed the user to add information into the application for personal use during the ranking process. MDEQ hosted a webinar where we invited all of the Basin Team members to participate and we discussed the process by which the ranking was completed, provided the link to the map application, and asked the team members to prioritize watersheds per Basin for their organization. If their priority watershed was not highlighted, MDEQ asked that the Basin Team member provide the HUC of interest back to MDEQ with an explanation of why it was a priority for their organization so that it could be

considered during the raking process. The webinar was followed up with a survey monkey questionnaire where each Basin Team member was asked to provide their top 5 priority watersheds. Using feedback from the questionnaires, MDEQ developed a list of the top 3 priority watersheds for each basin group in the state. From this list, project areas were proposed for funding in the FFY 2018 Section 319 Grant application (Old Fort Bayou, Upper Little Bayou Pierre, and Basket Creek). Using the process defined above, watersheds with highest priority in each Basin group will be prioritized for watershed plan development.

Stressor Identification

MDEQ has a strong team of scientists and engineers focused on evaluating water quality data and identifying stressors in water bodies that have been listed as being biologically impaired using benthic macroinvertebrate community data. If biological community data indicate that a water body segment is impaired, an investigative, stressor identification analysis using a strength-of-evidence approach is conducted to determine the cause(s) of the impairment. Such causes may range from specific pollutants (e.g. Total Nitrogen) to other causes of pollution such as sedimentation, habitat loss or hydrologic alteration. In most cases, nonpoint sources contribute, or are the primary causes of impairment. MDEQ relies upon all available monitoring and assessment data and conducts additional monitoring to gather the necessary data and information to help determine both the causes and sources of impaired waters. The *U.S. Environmental Protection Agency (EPA) Stressor Identification Process and Stressor Identification Guidance Document* (USEPA, 2000), is used to identify most probable stressors causing biological impairment to provide the information necessary to develop required TMDLs that will guide restoration activities. Funding under this grant supports staff time to conduct SI studies. Information resulting from these analyses are then used to develop TMDLs for impaired waters and are used to develop 9 Key Element watershed plans. In FY 2017, to further strengthen the Stressor Identification process, two independent peer reviews were conducted on MDEQ's Stressor Identification process.

Mississippi River and Gulf of Mexico Watershed Nutrient Task Force

MDEQ continues to support the efforts of the Mississippi River and Gulf of Mexico Watershed Nutrient Task Force (Task Force). The Task Force was established in 1997 to understand the causes and effects of eutrophication in the Gulf of Mexico, coordinate activities to reduce the size, severity, and duration, and mitigate the effects of hypoxia. The Hypoxia Task Force is a partnership of 12 states, five federal agencies, and a representative for the tribes that work collaboratively to reduce nutrient pollution in the Mississippi/Atchafalaya River Basin (MARB). Activities of the Task Force include coordinating and supporting nutrient management activities from all sources, restoring habitats to trap and assimilate nutrients, and supporting other hypoxia related activities in the Mississippi River and Gulf of Mexico watersheds.

On behalf of the Task Force, EPA recently submitted the 2017 Report to Congress and the President providing an update on the actions and status of work undertaken by the Task Force. This report can be accessed here: [Mississippi River/Gulf of Mexico Watershed Nutrient Task Force 2017 Report to Congress](#). As a member of the Task Force, Mississippi hosted the fall Hypoxia Task Force meeting in Biloxi, MS. The gathering was very productive and well

attended with much discussion directed to upcoming Farm Bill initiatives, evolving research needs, better ways to track conservation practices, opportunities for cooperative federalism, and the critical role partnerships play in achieving success.



Nutrient Criteria and Water Quality Standards Development

The *Clean Water Act (CWA)* requires that each state review their water quality standards at least every three years in a process called the triennial review. Water quality standards must include three components: (1) the designated uses of the State's water bodies; (2) the water quality criteria (narrative or numeric) necessary to protect those uses; and (3) antidegradation provisions to protect water quality. During the triennial review, that latest science and information available are considered, and when needed, criteria are updated to protect human health and aquatic life.

Excessive nutrient (phosphorus and nitrogen) loss from watersheds is frequently associated with degraded water quality in streams. To reduce this impact to surface waters, NPS sources originating from cropland farming practices and other watershed activities, are being evaluated for implementation of control measures. Due to concerns about eutrophication in the Nation's water bodies, EPA directed the states to develop and adopt numeric nutrient criteria for surface waters. Since it is thought that much of the Nation's and Mississippi's nutrient impairments are a result of NPS runoff, work is needed to confirm this premise and to develop scientifically defensible numeric nutrient criteria that are appropriate for Mississippi's surface waters.

Consistent with the requirements of the *CWA* and *WQS Regulation*, States are free to develop and adopt any use classification system they see as appropriate, except that waste transport and assimilation is not an acceptable use in any case. Once States have their use classification system in place, they must have criteria in place to protect these uses. A State can choose to adopt subcategories (and/or seasonal classifications) in its use classification system to further refine designated uses. Mississippi currently has a very basic use classification structure outlined in the water quality standards regulations. In FY 2017, initial work was completed by MDEQ in a collaborative effort with EPA to explore the potential to refine the use classifications in Mississippi and develop preliminary concepts for this effort. Stakeholders in Mississippi were supportive of the concept and MDEQ is moving forward with developing a more refined system to appropriately classify our water bodies.

Long Term Goals Supported:

Long Term Goals: See goals 1, 2, 3, 4, 5, 9, 10, 13, and 14 within the current 5-Year NPS Management Plan.

NPS PROJECTS

4. NPS Watershed Project Implementation

To implement NPS implement projects and the nutrient/pollutant reduction strategies, §319 NPS funding is being used to support projects in all regions of the state.

GY13 PROJECTS

Waste Pesticide Disposal Program

The primary goal of this project is to help Mississippi farmers and property owners minimize the environmental risks associated with the disposal of waste pesticide products by providing an opportunity to dispose of products in a safe and efficient manner. An event was held in Tunica County on February 23, 2017. This event was planned in an area of high agricultural productivity in the Mississippi Delta. For this event, 30,014 lbs. of agricultural waste pesticides were collected for a cumulative total of 172,944 lbs. thus far on this grant agreement. This project was completed on schedule and within budget.

Advancing Innovative Conservation Systems and Strategies in the MS Delta

The purpose of this project is to advance regional conservation implementation through planning, education, demonstration, and evaluation. This project has surpassed its goal of securing 120 producer contracts with the National Resource Conservation Service (NRCS) for implementation of irrigation-water and soil-health management practices. Over 1,714 applications have been received by NRCS, requesting \$9.6 million in conservation funding. As part of this project, 72 producers were directly engaged during the 2014, 2015, and 2016 irrigation seasons, which surpasses the initial goal of 30 producers; 24 of these producers were directly engaged in 2016. In FY 2017, work continued with participating farmers and producers to integrate winter cover crops as a soil health and nutrient reduction practice into farm management scenarios. While farmers are implementing this non-structural BMP into their farm management scenario, data collection is ongoing to determine the water quality benefits of this practice. This project was completed on schedule and within budget.

GY14 PROJECTS

Incremental Implementation Funding for Upper Porter Bayou, Middle Porter Bayou, and Overcup Slough Watershed Plans

The purpose of this agreement is to implement conservation practices in accordance with priority watershed based plans and to assess improvements in water quality within major watersheds of the Yazoo River Basin. The subgrantee, Delta F.A.R.M., implements water control structures and two-stage ditch/weir systems in the Upper Porter Bayou, Middle Porter Bayou, and Overcup Slough watersheds and incorporates new evaluation tools into monitoring programs for these watersheds. These conservation practices are in support of Conjunctive Water Management and

Nutrient Reduction Strategies in the Yazoo River Basin. Delta F.A.R.M., in coordination with MDEQ, NRCS, and private landowners, has implemented the following BMPs during FY17:

- 350 acres of cover crops were planted in the Upper Porter Bayou and Middle Porter Bayou watersheds.
- 600 acres of cover crops were planted in the Overcup Slough watershed.

This project is on schedule and within budget.

Long Term Goals Supported:

Long Term Goals: See goals 1, 2, 3, 4, 5, 6, 7, 10, and 11 within the current 5-Year NPS Management Plan.

GY15 PROJECTS

Little Topashaw Creek

BMP implementation is ongoing in the Little Topashaw Creek Watershed. This project is on schedule and within budget.

Jasper Creek

BMP implementation is ongoing in the Jasper Creek Watershed. This project is on schedule and within budget.

Ross Barnett Reservoir

The Ross Barnett Reservoir has been an irreplaceable resource for Central Mississippi since its construction in the late 1960s. It is the largest source of drinking water in the state supplying over 15 million gallons of water to local residents, businesses, and industries. As it has done for more than 50 years, this plentiful water resource also provides outstanding recreational opportunities, supports economic growth as well as scenic beauty and vital wildlife habitats.

Rezonate

In a continuing effort to leverage resources and to promote the message of protecting and restoring the Reservoir and the Pearl River Watershed, MDEQ, through the Ross Barnett Reservoir Initiative (known as Rezonate), has sponsored and helped facilitate several events in and around the Ross Barnett Reservoir. Rezonate was a major sponsor for the sixth annual Project Rezway Recycle Fashion Show that took place on April 27, 2017, at the Mississippi Craft Center in Ridgeland. The show featured apparel and accessories composed of at least 75 percent recycled materials. Keep the Rez Beautiful hosts this event annually with the aim of raising awareness of the importance of recycling and shows how commonly discarded items can be used again instead of littering the environment. Other major sponsors included Kathryn's Steakhouse, Waste Management, the Barnett Reservoir Foundation, MDOT, Keep Mississippi Beautiful, and the Pearl River Valley Water Supply District.

The annual Gator Bait Kayak Race, a 5.5-mile race for competitive and recreational kayakers, canoeists, and SUP (standup paddle boarding) paddlers, is another event sponsored through the Rezonate initiative. The event was held on October 7, 2017 at Pelahatchie Shore Park with 52 kayakers from the local area and other states participating. Once again, this successful event raised awareness about the water quality of the Reservoir and the need to protect it through conservation education and litter control.

The third annual Gator Bait Hatchling Race was held at Lakeshore Park on September 16, 2017 and its goal is to introduce kids to the sport of kayaking, foster a love for the outdoors, and instill a desire to protect the environment. Other sponsors of the event were the Mississippi Wildlife Federation, Keep the Rez Beautiful, YMCA, Barnett Reservoir Foundation, Pearl River Kayaks, Kroger, Marco's Pizza, and Service Printers.

Keep Jackson Beautiful Eco Ambassadors Program is a hands-on, action-based environmental stewardship program that fosters a new breed of environmental stewards for the future of our Planet while encouraging environmental careers. The program will strengthen and increase partnerships by providing youth and communities with the tools to implement and produce creative and innovative solutions that affect our natural and built environment.

Pearl River Keeper's first annual Pearl River Clean Sweep which is a watershed-wide cleanup from the headwaters of the Pearl River in Nanih Waiya, Mississippi, south through the Ross Barnett Reservoir, along the border of Mississippi and Louisiana, all the way to the Gulf Coast in Pearlinton. Cleanup teams were deployed at over 20 locations in 13 Mississippi counties, 2 Louisiana parishes, and over 490 miles of beautiful river!

During the 2017 project period, the following projects were completed or/are ongoing:

- Use of composting toilets upriver at Flag Island to reduce the impact of potential bacteria and pathogens entering the Reservoir.
- Lakeshore Park Rain Garden rehab to reduce storm water runoff entering the Reservoir.
- Rezonate kiosks about watershed protection and restoration installed at Old Trace Park and Lakeshore Park.

Rezonate, through MDEQ, also partnered with the City of Ridgeland to increase awareness of project mission and goals by reaching more defined targeted audiences and to teach citizens about the importance of protecting drinking water sources especially in the Ross Barnett Reservoir watershed.

This project is on schedule and within budget.

Long Term Goals Supported:

Long Term Goals: See goals 1, 2, 3, 4, 5, 6, 7, 10, and 11 within the current 5-Year NPS Management Plan.

GY16 PROJECTS

Red Bud – Catalpa Creek

Of major importance for Basin Group I is the formation of the Catalpa Creek Watershed team in the Tombigbee River Basin. Catalpa Creek has its headwaters on the Mississippi State University campus and the southeastern part of the City of Starkville. This grassroots team has done extensive preparation and planning to get this project underway, building important partnerships and developing a water resources management plan for the Hydrologic Unit Code 12 Red Bud—Catalpa Creek watershed. The team has members from many departments, various centers and institutes at Mississippi State University, as well as members from the local agricultural community and the City of Starkville. They have written a watershed plan and proposals are going out to many agencies to leverage funding. MDEQ will provide funding for Phase I of the project by using a Section 319 grant. The Phase 1 implementation plan was approved by both MDEQ and EPA Region 4 and the Memorandum of Agreement (MOA) to implement the project between MDEQ and Mississippi State University (MSU) is in the final stages of approval. This project has not started yet.

Dry Creek

Partners in the Dry Creek Watershed have been working to develop a watershed-based plan and watershed implementation project for Dry Creek in the Pascagoula River Basin. Implementation should begin in early 2018. The watershed plan has been approved by EPA and the MOA to between the Mississippi Soil and Water Conservation Commission and MDEQ to implement the project is under development. This project has not started yet.

Long Term Goals Supported:

Long Term Goals: See goals 1, 2, 3, 4, 5, 6, 7, 10, and 11 within the current 5-Year NPS Management Plan.

5. Support for Watershed Projects Implementation

The Nonpoint Source (NPS) Management Program is designed to support a wide variety of technical assistance, environmental education, technology transfer, demonstration, monitoring, analysis, and watershed protection and restoration projects. The NPS Program provides financial assistance to state agencies, local governments, resource agency partners, universities, and non-profit organizations to support the development and implementation of these projects.

The NPS Program business process focuses primarily on targeting priority watersheds, identified under the State's *Basin Management Approach* and *Prioritization Framework* by implementing specific watershed protection and restoration projects. In most instances, TMDLs provide the NPS program with the measurable water quality load reduction goals needed to restore waterbodies to their designated use. Important activities supported under this element include: water quality monitoring, data gathering, and assessment; water quality data analysis and evaluation; iterative watershed characterization and tracking of land-use practices; watershed plan implementation; and watershed plan evaluation and if needed, modification.

The Office of Pollution Control staff, in cooperation with the Office of Land and Water, the National Resource Conservation Service (NRCS), the U.S. Geological Survey (USGS) and Mississippi Soil and Water Conservation Commission, will continue to act as resource agencies for information on managing NPS project support for watershed projects. Public education and technical support for these projects are provided for all categories of NPS pollution. The purpose of this support in funding is to aid ongoing Watershed Nutrient Reduction Projects, NPS demonstration projects, active *National Water Quality Initiative* (NWQI) and *Mississippi River Basin Initiative* (MRBI) watershed projects, and previously funded watershed implementation projects where continued monitoring is needed to show success. Milestones/Outputs for the technical assistance activities associated with watershed project support include participating in Basin Team meetings, conservation education, project tracking, monitoring, and other watershed project type activities that are directly supporting a NPS Watershed project. Specific examples of watershed project support activities include:

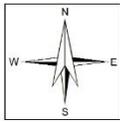
United States Geological Survey

USGS - Mississippi Water Science Center and MDEQ have an ongoing partnership to develop and implement watershed monitoring plans to include pre- and post- monitoring for selected §319-funded restoration projects. Water quality data (e.g. biological, physical, chemical, and/or stream flows) is collected annually at various locations throughout the State in waters that have been assessed as impaired and where BMPs have been implemented in the recent past. All final data are available on USGS's publicly facing data warehouse [NWIS \(National Water Information System\)](#) and interpretations will be published as an interpretive report after each individual project. All MDEQ monitoring funded by EPA grants is carried out under QAPPs prepared in accordance with the EPA QAPP Guidelines. The USGS station numbers for monitoring sites funded through this project are as follows:

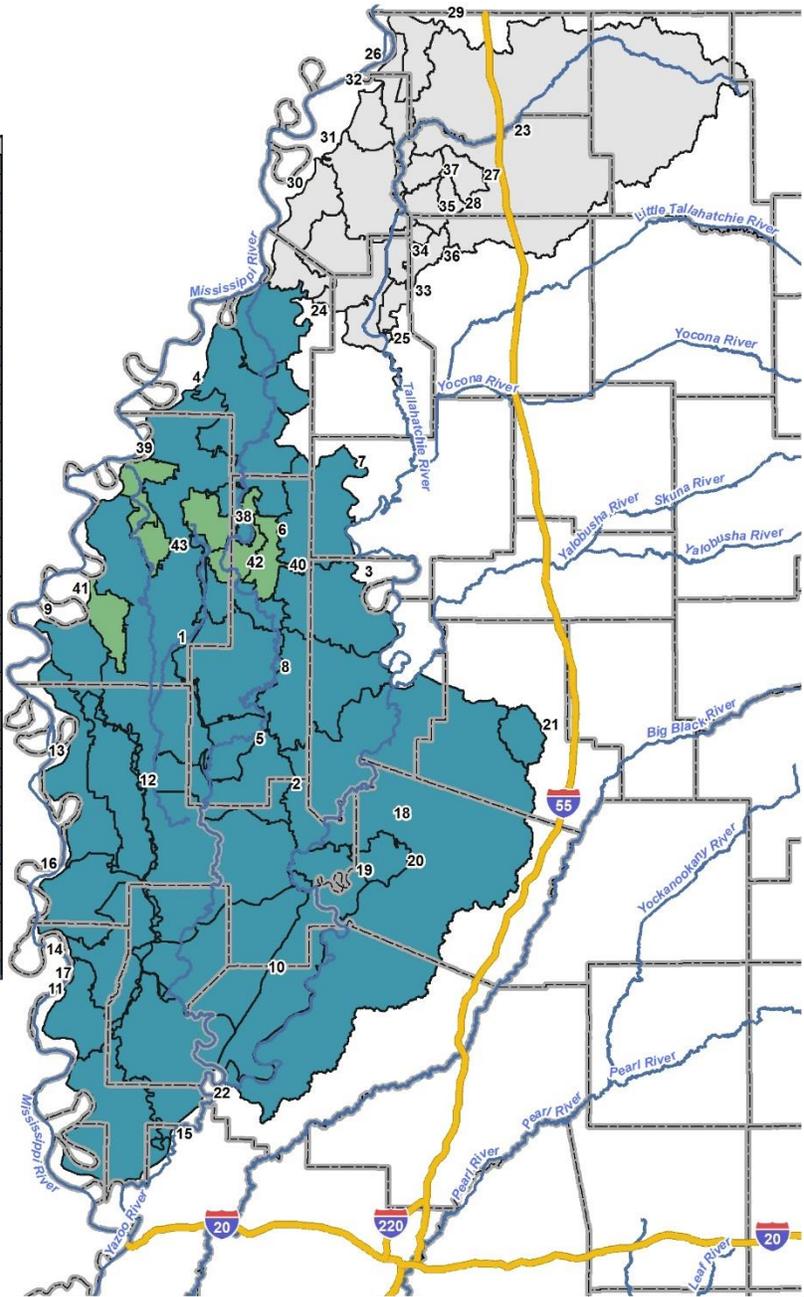
USGS Station Number	enSPIRE ID	USGS Station Name and Description
333420090445900	111A24	Porter Bayou Trib No. 1 NW Frazier, MS
333830090394600		Porter Bayou Trib No. 4 near Shaw, MS
07288521	111B40	Porter Bayou at Stephenville, MS
333601090450000		Porter Bayou near Shaw, MS
341404090385600	111D07	Overcup Slough Trib No. 1 near Farrell, MS
341550090391300	113A30	Overcup Slough Trib No. 2 near Farrell, MS
07288068	111B37	Harris Bayou at Palmer Rd East of Alligator, MS
07288048	111A14	Riches Bayou at Sherard, MS
330304090210100	111D04	Bee Lake Tributary No. 1 near Thornton

Natural Resource Conservation Service

The NPS Program is implemented in cooperation with several agencies, organizations, and groups at all levels of government and in the private sector. A great focus is given to activities that promote consensus building and partnering to increase the overall effectiveness of the State's NPS Program. One key partnership to increase this overall effectiveness of the program is with the USDA NRCS. MDEQ's memorandum of agreement with the USDA NRCS allows for greater collaboration and consistency in selecting priority areas within the state of Mississippi. This agreement allows for more leveraging between agencies and other partners to target the same areas, increasing the impact of the programs NRCS offers and the Section 319 funding MDEQ receives. Using the assessment tools, such as the Mississippi Watershed Characterization and Ranking Tool (MWCRT), and monitoring data have allowed for more informed decisions to be made regarding water quality issues in Mississippi. A couple of these collaborations include acquiring funding for the MRBI and the NWQI programs. This collaboration of agencies has brought in \$25,228,790 (MRBI) and \$2,815,397 (NWQI) in funding to install conservation practices to address water quality issues in Mississippi between FY 2014 to FY 2017. This funding was in addition to the regular funding that NRCS receives through the Environmental Quality Incentive Program (EQIP). This agreement has also helped in leading efforts to add two more NWQI watersheds in Mississippi in FY2017 with funding dedicated specifically for planning activities. Phase I of MRBI was active from FY2010 to FY2014, Phase II was active from FY2011 to FY2015, and Phase III is currently active for FY2016 to FY2017. Maps for MRBI and NWQI watersheds can be viewed below.



NAME	PHASE	ID
Big Sunflower River	I	1
Dawson Bayou-Big Sunflower River	I	2
Fighting Bayou-Quiver River	I	3
Harris Bayou-Big Sunflower River	I	4
Indian Bayou-Big Sunflower River	I	5
Mound Bayou-Big Sunflower River	I	6
Parks Bayou-Quiver River	I	7
Porter Bayou-Big Sunflower River	I	8
Rolling Fork Creek-Upper Deer Creek	I	9
Silver Creek-Big Sunflower River	I	10
Deer-Steele	I	11
Black Bayou	I	12
Granicus Bayou	I	13
Indian Bayou-Steele Bayou	I	14
Lower Deer Creek-Steele Bayou	I	15
Washington Bayou-Steele Bayou	I	16
Whiting Bayou-Steele Bayou	I	17
Upper Yazoo River	I	18
Lower Tchula Lake-Yazoo River	I	19
Tchula Lake Cutoff-Tchula Lake	I	20
Upper Pelucia Creek	I	21
Will M. Whittington Auxiliary Channel	I	22
Coldwater River	II	23
Muddy Bayou-Coldwater River	II	24
Lower Coldwater River	II	25
Lower Lake Cormorant Bayou-Coldwater River	II	26
Middle Arkabutla Creek	II	27
Patent Creek-Strayhorn Creek	II	28
Upper Lake Cormorant Bayou	II	29
Phillips Bayou-Yazoo Pass	II	30
White Oak Bayou-Coldwater River	II	31
Buck Island Bayou	II	32
Burrell Bayou	II	33
David Bayou	II	34
Egypt Creek-Strayhorn Creek	II	35
Indian Creek	II	36
Lower Arkabutla Creek	II	37
Beaver Bayou-Mound Bayou	III	38
Brook Bayou	III	39
Burrell Bayou	III	40
Christmas Lake Bayou	III	41
Long Lake	III	42
Tommie Bayou	III	43



Legend

- MRBI Watersheds
 - Phase I (light blue)
 - Phase II (medium blue)
 - Phase III (dark blue)
- County (black outline)
- Major River (blue line)
- Interstate (yellow line)

MRBI Watersheds
Phases I - III



Mississippi Counties

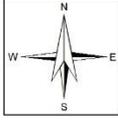


This map produced by the Department of Environmental Quality (MDEQ), Office of Pollution Control, Surface Water Division, Standards, Modeling, and TMDL Branch on April 26, 2017.

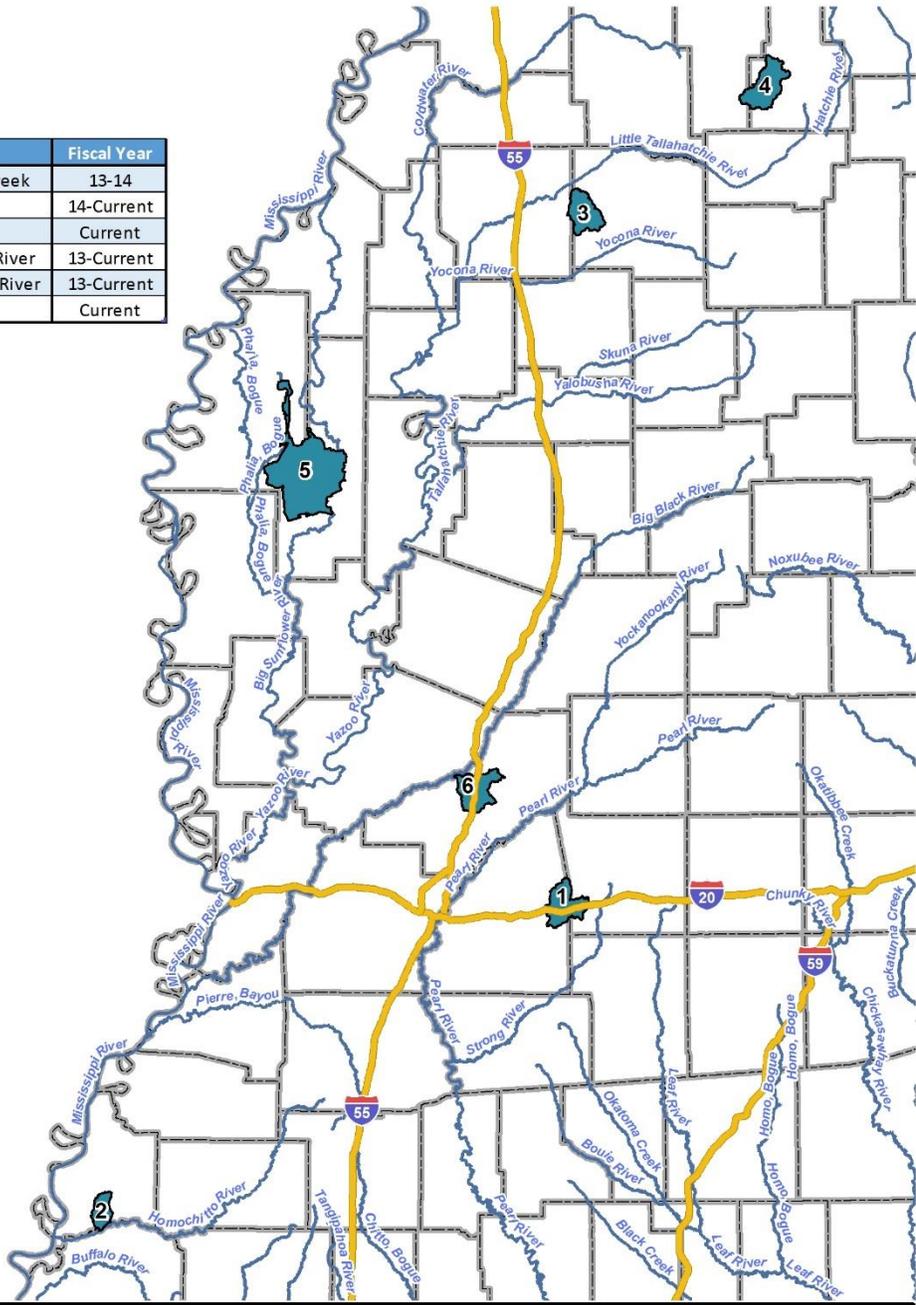
All map data is from the Mississippi Automated Resource Information System (MARIS), and MDEQ.

Map Projection: Mississippi Transverse Mercator

The Mississippi Department of Environmental Quality makes no warranties, expressed or implied, as to the accuracy, completeness, currentness, reliability, or suitability for any particular purpose, of the data contained on this map.



ID	NAME	Fiscal Year
1	Ashlog Creek-Pelahatchie Creek	13-14
2	Chase Bayou-Sammy Creek	14-Current
3	Hudson Creek-Clear Creek	Current
4	North Tippah Creek-Tippah River	13-Current
5	Porter Bayou-Big Sunflower River	13-Current
6	Tilda Bogue-Bear Creek	Current



- Legend**
- NWQI Watershed
 - Major River
 - Interstate
 - County

NWQI Watersheds
FY 13- Current FY



Mississippi Counties



This map produced by the Department of Environmental Quality (MDEQ), Office of Pollution Control, Surface Water Division, Standards, Modeling, and TMDL Branch on April 27, 2017.

All map data is from the Mississippi Automated Resource Information System (MARIS), and MDEQ.

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Mississippi Department of Environmental Quality

MDEQ provides monitoring support to NPS projects through funding under this element. Project data is sent to STORET as part of MDEQ's CWA Section 106 data flow. The projects and their corresponding streams and (environmental Surface water Portal for Information Repository and Exchange) enSPIRE IDs are as follows:

Project	Stream Names	enSPIRE ID
Lake Washington (GY07)	Unnamed Creek	111B53
	Lake Washington	YZ322
Ross Barnett Reservoir (GY08, GY10, GY11, GY15)	Ross Barnett Reservoir	549RBR01
	Ross Barnett Reservoir	549RBR02
	Ross Barnett Reservoir	549RBR03
	Ross Barnett Reservoir	549RBR04
Porter Bayou (GY09, GY14)	Porter Bayou	111A24
	Porter Bayou	111B40
	Porter Bayou	111D21
	Porter Bayou	111F01
	Porter Bayou	113A37
	Porter Bayou	113A38
	Porter Bayou	113A39
	Porter Bayou	113A40
	Porter Bayou	113A41
	Porter Bayou	113A42
	Porter Bayou	113A43
	Porter Bayou	113A44
Harris Bayou (GY09, GY14)	Richies Bayou	111A14
	Harris Bayou	111B37
	Overcup Slough	111D07
	Overcup Slough	111D08
	Overcup Slough	111D09
	Overcup Slough	113A30
Bee Lake (GY10)	Bee Lake	111D04
Rotten Bayou (GY10, GY11)	Rotten Bayou	02481663
	Bayou La Terre	02481665.18
	Eutaeutachee Creek	112A16
	Hickory Creek	112C68
	Bayou Lasalle	112D64
	Mill Creek	112D67
	Rotten Bayou	112D99
	Pellaphalia Creek	113A47
	Rotten Bayou	113B82
Coldwater River (GY11)	Walnut Lake	113D87
	White Oak Bayou	113D88
Sunflower Restoration Project	Big Sunflower River	07288621
	Turkey Bayou	111A49

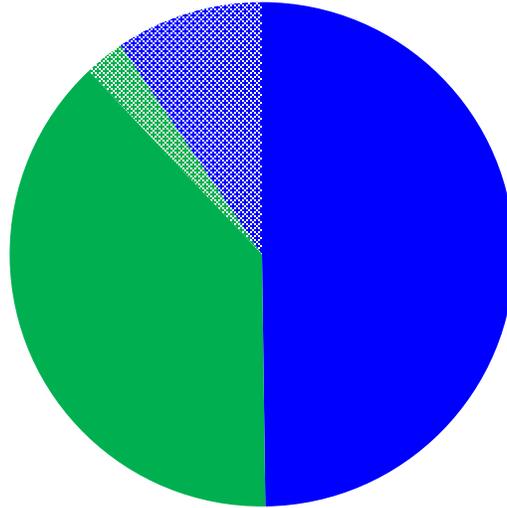
(2012)	Quiver River Parks Bayou Quiver River Quiver River	113B21 113B22 113B23 A1350019
Bell Creek-West Prong Muddy Creek (GY10, GY13)	North Prong Muddy Creek West Prong Muddy Creek North Prong Muddy Creek North Prong Muddy Creek North Prong Muddy Creek Muddy Creek Muddy Creek Bell Creek	112D69 112D52 113B77 113B79 113B80 113B81 NI015 NI016
Tarebreeches Creek (GY10, GY13)	Tarebreeches Creek Tarebreeches Creek Eastes Creek Little Cane Creek Tarebreeches Creek Little Cane Creek	112B42 112D62 112D63 113B75 113B76 113B78
North Tippah Creek (GY11)	North Tippah Creek North Tippah Creek South Tippah Creek Medlock Branch North Tippah Creek	112B44 112B80 113A45 113A46 113B66
Jasper Creek (GY15)	Jasper Creek Jasper Creek	YZ408 YZ409
Little Topashaw Creek (GY15)	Little Topashaw Creek Little Topashaw Creek	YZ091 112D71
Catalpa Creek (GY16)	Catalpa Creek Catalpa Creek Catalpa Creek Catalpa Creek Catalpa Creek Catalpa Creek Catalpa Creek	111F08 111F09 111F10 111F11 111F12 111F13 112B83
Dry Creek (GY 16)	Dry Creek Dry Creek Dry Creek	PA024 PA347 111D23

Long Term Goals Supported:

Long Term Goals: See goals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11 within the current 5-Year NPS Management Plan.

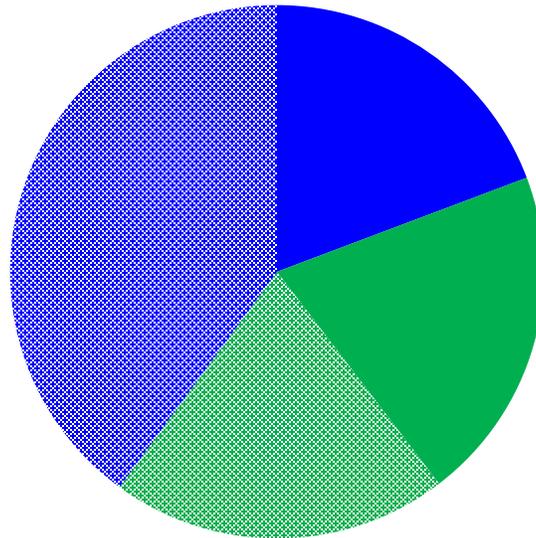
GRANT BUDGET SUMMARY

GY14 Funds



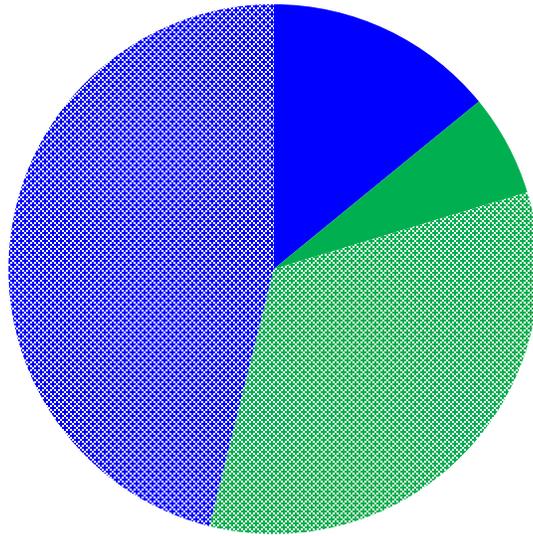
■ Project (spent) ■ Program (spent) ■ Program (balance) ■ Project (balance)

GY15 Funds



■ Project (spent) ■ Program (spent) ■ Program (balance) ■ Project (balance)

GY16 Funds



■ Project (spent) ■ Program (spent) ■ Program (balance) ■ Project (balance)

GY17 Funds

MDEQ was awarded the 2017 Grant on August 28, 2017, and received the funds in-house on September 6, 2017. These funds are in the process of being allocated.

Appendix H

Statewide Milestones for Water Quality Improvement	Schedule				
	2014	2015	2016	2017	2018
1. Water Quality Improvement from Nonpoint Source Controls					
a. <u>Assess waterbodies for designated use on Mississippi's biennial 305(b) report:</u> Identify the waters meeting or not meeting the appropriate designated use.	-	Ongoing	305(b)report <i>submitted</i>	Ongoing <i>Currently on schedule</i>	305(b)report
b. <u>Waterbodies not meeting designated use placed on Mississippi's 303(d) list of impaired waters.</u> Identify the waters not meeting one or more designated use and provide appropriate listing	-	Ongoing	303(d)list of impaired waters <i>submitted</i>	Ongoing <i>Currently on schedule</i>	303(d)list of impaired waters
c. <u>Report on lifting of fish consumption advisories</u>	Data collection at 10% of the sites where consumption advisories exist.	-Data collection at 25% of the sites where consumption advisories exist. -Data evaluated by Task Force. -Advisories lifted based on Task Force recommendations.	-Data collection at 25% of the sites where consumption advisories exist. -Data evaluated by Task Force. -Advisories lifted based on Task Force recommendations <i>On schedule</i>	-Data collection at 25% of the sites where consumption advisories exist. -Data evaluated by Task Force. -Advisories lifted based on Task Force recommendations <i>On Schedule</i>	-Data collection at 25% of the sites where consumption advisories exist. -Data evaluated by Task Force. -Advisories lifted based on Task Force recommendations.

Statewide Milestones for Water Quality Improvement	Schedule				
	2014	2015	2016	2017	2018
2. Interim Progress Toward Restored Water Quality and Hydrology					
<p>a. <u>Number of waterbodies identified in Mississippi's 2000 303d/305b list of impaired waters or subsequent years as being primarily NPS impaired that are partially or fully restored (WQ-10):</u> Identify fully restored water bodies primarily impaired by NPS pollutants; review NPS related activities in watershed where water body was restored; write NPS success story.</p>	1 <i>submitted</i>	1 <i>submitted</i>	1 <i>submitted</i>	1 <i>submitted</i>	1
<p>b. <u>Number of water bodies where in-stream concentrations of NPS parameters have been reduced (i.e. sediment, fecal coliform, and bacteria) (SP-12):</u> Annually review water quality data for data trends indicating reductions in sediment, fecal coliform bacteria and nutrients as a result of NPS activities; write NPS success story.</p>	1 <i>submitted</i>	1 <i>submitted</i>	1 <i>submitted</i>	1 <i>submitted</i>	1

Statewide Milestones for Water Quality Improvement	Schedule				
	2014	2015	2016	2017	2018
<p>c. <u>Percentage of WBP recommended BMPs Implemented:</u> Implementing target percentage of recommended BMPs for each grant project implementing specific WBPs that meet EPA's nine elements.</p>	80% <i>Achieved</i>	80% <i>Achieved</i>	80% <i>Achieved</i>	80% <i>Achieved</i>	80%
3. Protection of High Quality Waters					
a. <u>Develop a plan for protection of high quality waters</u>	-	Ongoing	305(b) report <i>submitted</i>	Ongoing <i>Currently on Schedule</i>	305(b) report
4. Nonpoint Source Pollutant Load Reduction					
<p>a. <u>Estimated annual reductions in pounds of Nitrogen from NPS in watersheds;</u> Annually review information from NPS staff and project stakeholders for NPS load reductions of nitrogen; and include information in NPS annual report and GRTS.</p>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually

Statewide Milestones for Water Quality Improvement	Schedule				
	2014	2015	2016	2017	2018
<p>b. <u>Estimated annual reductions in pounds of Phosphorus from NPS in watersheds:</u> Annually review information from NPS staff and project stakeholders for NPS load reductions of nitrogen; and include information in NPS annual report and GRTS.</p>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually
<p>c. <u>Estimated annual reductions in tons of Sediment from NPS in watersheds:</u> Annually review information from NPS staff and project stakeholders for NPS load reductions of nitrogen; and include information in NPS annual report and GRTS.</p>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually <i>Achieved</i>	Submit project load reduction via GRTS reporting by February 15 th annually
5. Implementation of Nonpoint Source Controls					
<p>a. <u>Develop a plan for Prioritization of TMDL development per the EPA 303(d)/305(b) visioning process:</u> Plan for prioritizing TMDL or alternative development. This plan will be coordinated with the nonpoint source program's prioritization.</p>	Plan Development	Initial Implementation	Ongoing Implementation <i>Achieved</i>	Ongoing Implementation <i>Achieved</i>	Ongoing Implementation

Statewide Milestones for Water Quality Improvement	Schedule				
	2014	2015	2016	2017	2018
b. <u>Number of TMDLs or alternative plans developed for impaired watersheds:</u> Developing TMDLs or alternatives (i.e. 5R or WBP) for impaired waters.	2 <i>Achieved</i>	2 <i>Achieved</i>	2 <i>Achieved</i>	2 <i>Achieved</i>	2
c. <u>Number of Lakes with numeric Nutrient Criteria where none previously existed:</u> Number of lakes where new standards are developed per Mississippi's Plan for the Adoption of Water Quality Standards for Nutrients.	-	-	-	4 <i>Nutrient Criteria on schedule with mutually agreed upon plan</i>	-
6. Public Education, Awareness, and Action					
a. <u>Conduct an average of 4 (regional) Envirothon Competitions and 1 state competition per year (to include 300 students per year)</u>	4 Regional 1 State <i>Achieved</i>	4 Regional 1 State <i>Achieved</i>	4 Regional 1 State <i>Achieved</i>	4 Regional 1 State <i>Achieved</i>	4 Regional 1 State
b. <u>Conduct a minimum of 4 Adopt-A-Stream workshops and maintain outreach to an average of 10,000 people each year through large venue environmental events</u>	4 <i>Achieved</i>	4 <i>Achieved</i>	4 <i>Achieved</i>	4 <i>Achieved</i>	4

Statewide Milestones for Water Quality Improvement	Schedule				
	2014	2015	2016	2017	2018
c. <u>Conduct no less than 10 environmental education teacher workshops, annually, in an average of 5 regions of the state (approximately 200 teachers per year)</u>	10 <i>Achieved</i>	10 <i>Achieved</i>	10 <i>Achieved</i>	10 <i>Achieved</i>	10
d. <u>Conduct a minimum of 10 PLT workshops per year (approximately 150 teachers)</u>	10 <i>Achieved</i>	10 <i>Achieved</i>	10 <i>Achieved</i>	10 <i>Achieved</i>	10
e. <u>Provide a minimum of 8 workshops on Urban Forestry and Water Quality</u>	8 <i>Achieved</i>	8 <i>Program under re-design; GI/LID workshops conducted</i>	8 <i>Proposal submitted and approved; GI/LID workshops conducted</i>	8 <i>Program scheduled for implementation</i>	8
f. <u>Partner with the Mississippi Pearl River Valley Water Supply District and the Ross Barnett Reservoir foundation to conduct the WaterFest Event, which is enjoyed by more than 5,000 people annually</u>	1 <i>Achieved</i>	1 <i>Achieved</i>	1 <i>Achieved</i>	1 <i>Achieved</i>	1
g. <u>Support a minimum of 10 performances per year of the Watershed Harmony Musical Puppet Theater, educating an estimated 10,000 students, teachers and others, annually</u>	10 <i>Achieved</i>	10 <i>No contractual mechanism in place with vendor</i>	10 <i>No contractual mechanism in place with vendor</i>	10 <i>Achieved</i>	10

Statewide Milestones for Water Quality Improvement	Schedule				
	2014	2015	2016	2017	2018
h. <u>Support an average of 4 sessions of Student Environmental Day Camps, annually, for approximately 100 students per year</u>	4 <i>Achieved</i>	4 <i>Achieved</i>	4 <i>Achieved</i>	4 <i>Achieved</i>	4
i. <u>Support the annual Make A Splash Event at the MS Natural Science Museum, attended by an average of 1000 students and teachers</u>	1 <i>Achieved</i>	1 <i>Achieved</i>	1 <i>Achieved</i>	1 <i>Achieved</i>	1
j. <u>Work with the Foundation for Public Broadcasting on Public Service Announcements/Literature Distribution</u>	1 <i>Achieved through other outreach mechanisms</i>	1			
7. Program Measures of Success					
a. <u>Number of new nine element watershed based plans developed:</u>	4	4	4	4 <i>Achieved</i>	4
b. <u>Number of new nine element watershed based plans reviewed and accepted by USEPA:</u>	1	1	1	1	1