

**MISSISSIPPI'S NONPOINT SOURCE
POLLUTION CONTROL
SECTION 319(h) GRANT PROGRAM
WORK PLAN
FOR GRANT YEAR 2022**



**MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY**

Prepared for

United States Environmental Protection Agency
Section 319(h) of the Clean Water Act

Prepared by

The Mississippi Department of Environmental Quality
Basin Management and Nonpoint Source (NPS) Branch
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Introduction

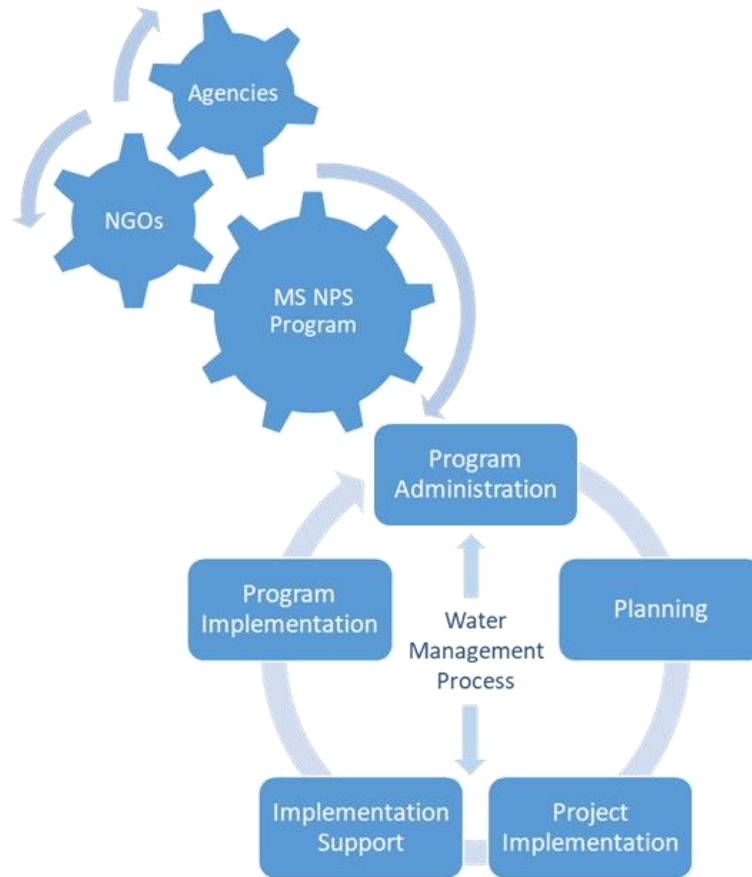
The state's Nonpoint Source (NPS) Pollution Control Program is implemented under the guidance of the Mississippi Department of Environmental Quality's Mission Statement "*to safeguard the health, safety and welfare of present and future generations of Mississippians by conserving and improving our environment and fostering wise economic growth through focused research and responsible regulation.*"

Information contained herein represents work outlined for fiscal year 2022 Section 319(h) NPS Grant funding and is structured to support the implementation of both the long-term and short-term goals identified in the EPA approved update to the state's NPS Management Program Plan. The plan fulfills the requirements of both Section 319(h) of the Clean Water Act Amendments of 1987, and Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA). It comprehensively describes a framework for agency coordination and cooperation and serves to implement a strategy for employing effective management measures and programs to control NPS pollution statewide.

The state's strategy for the management and abatement of NPS pollution relies on statewide and targeted watershed approaches. These approaches are implemented through both regulatory and non-regulatory programs on the federal, state, and local levels. The implementation of program activities or categories that are not regulated rely primarily on the voluntary cooperation of stakeholders and are supported financially through federal assistance programs such as Section 319(h) and available state resources. The approach for addressing NPS pollution on a statewide level includes education and outreach, monitoring and assessment, planning activities, consensus building, and partnering. At the watershed level, implementing the Mississippi NPS Program includes the development of watershed-based plans, implementation of practices to control NPS pollution, inspection of NPS pollution control practices, monitoring to detect changes in water quality, as well as local consensus building, partnering, and education and outreach efforts.

To improve transparency and consistency with both reporting and management of funds under the §319 grant, all grant funded activities are grouped into five core functions or elements. This allows for more seamless, consistent reporting of both program level and project level activities as well as

submittal of required financial reports. As such, all grant activities are organized under one of the following 5 functional elements of the Mississippi NPS Management Program: Program Administration, Program Implementation, Planning, Project Implementation Support. The sections below describe the work activities and/or projects funded in each of these core elements of the program.



The work plan supports MDEQ’s efforts to focus on nutrient pollution reduction activities and leverage multiple state and federal resources. Components of the nutrient reduction efforts support the Gulf Hypoxia Action Plan through the development and implementation of regional nutrient reduction strategies and Mississippi’s Nutrient Criteria Development Plan. In support of these efforts, §319(h) NPS funding will continue to be used statewide to implement the nutrient pollution reduction efforts.

This grant year (GY) 2022 work plan includes specific restoration and protection projects. The work plan is divided into two major sections: *Program Fund Allocation and Watershed Project Fund Allocation*. The Program Fund Allocations from the GY 2022 §319 NPS funding will be used to implement program support activities such as program administration, statewide collaborative strategies, education and outreach programs, statewide monitoring and assessments, and watershed planning activities. The Watershed Project Allocation from the GY 2022 §319 NPS funding will be used to implement watershed restoration and protection plans which focus on implementing technical best management practices to reduce pollutants entering watersheds and engaging key targeted audiences to reduce nonpoint source pollutants from

developed areas. These management practices will be in areas within the Upper Piney Creek, Fuller Creek-Town Creek, and Muddy Bayou watersheds. These watersheds have been prioritized because they have impaired waters with completed total maximum daily loads (TMDLs) for identified pollutant(s); have existing water quality monitoring data and collection sites; have been identified as having critical sediment and nutrient issues in the watershed(s); and the local stakeholders and partners have expressed a desire to participate in area wide best management practice implementation to address the watershed issues of concern.

Implementation of the NPS Program is done in cooperation with numerous agencies, organizations, and groups at all levels of government and in the private sector. Priority will be given to activities that promote consensus building and resource leveraging opportunities to increase the overall effectiveness of the state's NPS Program.

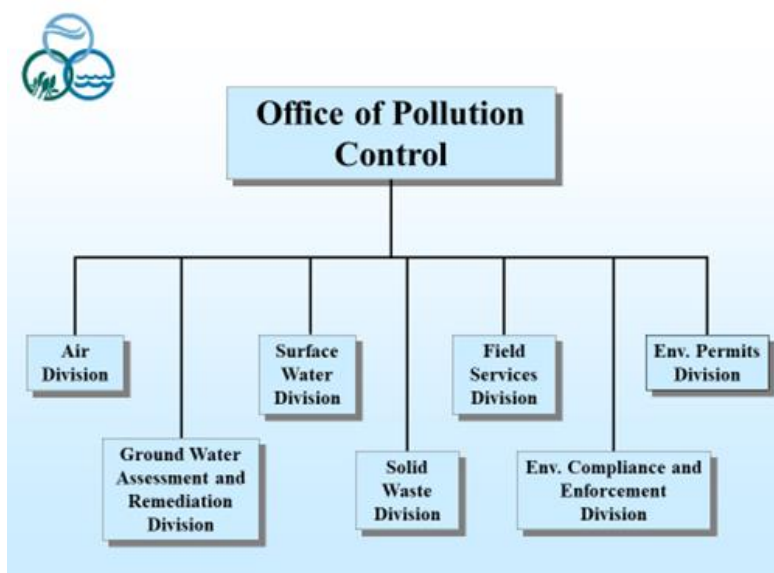
To meet our NPS Management Program goals and the priorities selected in the Basin Management Approach, the following funding breakdown is proposed. Approximately 7% will fund Statewide NPS Program Administration, approximately 33% will fund Statewide NPS Program Implementation, and 9% will fund NPS Watershed Planning. These first three elements make up the Program Funds (49%) of the grant. For the Watershed Project Funds of the grant, 34% will fund NPS Watershed Project Implementation, and the remaining 17% will fund Support for Watershed Projects Implementation, thus totaling 51% for Watershed Project Funds. A detailed budget summary is provided in Table 1 included at the end of this work plan.

NPS Program Fund Allocations

Element 1: 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. These functions include oversight of the program; management of the program budget and associated grant; and, development of the required annual reports as required per the §319 grant administrative conditions.

Program Oversight: Day-to-day administration of the Mississippi NPS Program is primarily the responsibility of the Chief of the MDEQ Basin Management and NPS Branch. However,



Office of Pollution Control Organizational Chart

MDEQ personnel outside of the Basin Management and NPS Branch also contribute to administration of the Mississippi NPS Program. The Basin Management and NPS Branch is part of the Surface Water Division within the MDEQ Office of Pollution Control. This organizational structure also keeps the program included as an integral part of MDEQ's Clean Water Act (CWA) water management programs and allows for communication and integration of Mississippi's NPS Program goals with other CWA programs managed within Office of Pollution Control and other

programs at MDEQ. The Surface Water Division Chief facilitates and ensures this communication among programs and provides oversight of the Mississippi NPS Program.

Budget and Grant Administration: This is a critical component as tracking expenditures is vital to program oversight. Many grant implementation activities are handled through sub-grants with other agencies. Management of the Mississippi NPS Program budget is an important part of administering the program. Federal grant money provided to MDEQ under §319 makes up part of the Mississippi NPS Program budget. The federal government requires that the use of §319 grant money, and match, be tracked and reported to ensure it is being used appropriately. Reporting on use of §319 grant money, and other grant management activities, are part of managing the Mississippi NPS Program budget. Management of Mississippi NPS Program grants includes interaction between MDEQ and EPA in the form of:

- Overseeing grant preparation,
- Negotiating grant agreements,
- Receiving grant awards,
- Reporting on expenditures and deliverables, and
- Developing grant close-out reports.

The MDEQ Office of Administrative Services has staff that specialize in grant applications, federal financial reporting, and in performing financial risk assessments for sub-grantees. These staff work with Basin Management and NPS Branch staff to ensure the financial reporting requirements for the Mississippi Section 319 grants are met.

Annual Report: Each year the Basin Management and NPS Branch prepares a report describing the activities completed by Mississippi NPS Program during the last year. This annual report is also a federal requirement for NPS Programs. The annual report is submitted to EPA in December and made available to the public on the MDEQ website. This annual report includes:

- A summary of activities over the past year in each of the Mississippi NPS Program elements,
- Explanation of how the activities over the past year contribute to achievement of NPS Program goals,
- A summary of the progress in achieving Mississippi NPS Program milestones, and
- An estimate of the status of expenditures for each of the five active §319 grants at the end of the year.

Schedule: The overall completion date is consistent with the end of the grant period which is September 30, 2026. Funding to support the Program Administration functions represents 7% of the overall grant and therefore is in compliance with EPA’s requirements that administration cost cannot exceed 10% of the grant.

MS NPS Management Plan Goals	Program Administration-Element 1
Goal 1: Periodically review, assess, and report on progress toward achieving the NPS Program goals and milestones and revise as new information becomes available.	
Goal 2: Manage the NPS Program budget and grants efficiently using appropriate technical and financial instruments.	
Goal 3: Ensure consistency among the NPS Program and other federal and state water resource programs and projects.	

Element 2: Program Implementation

As with most water management programs, the Mississippi NPS Management Program is forced to function in both the technical environment of water quality management while also working to communicate goals and project outcomes with partners in both technical and non-technical fields. While technical information is important to the Mississippi NPS Program, understanding the social nature of differing stakeholder groups, how they best understand information presented to them, and how to encourage people to take an active role in managing NPS pollution in their watersheds is a critical component of program success. Ultimately, NPS pollution occurs as a result of human activities. Therefore, working with people is a critical part of implementing the Mississippi NPS Program. This includes collaboration, program transparency and awareness, education, and outreach.

Element 2 includes the activities that support the Mississippi NPS Program by implementing projects and activities that focus on work that is broader in scale than a HUC 12 watershed and is where most of the staff time is spent. Work done under this element ensures the NPS Program functions on a day to day basis, supports efficient management of grant funds, and helps to implement activities that support program objectives that are broader in scope but are instrumental to mitigating NPS pollution statewide. These activities include developing and managing subgrants; tracking and reporting progress; supporting awareness, education, and education; and supporting the development of strategies, tools, and providing for knowledge transfer.

Developing and Managing Subgrants

The process of developing and management sub-grants is critical to maintaining an effective NPS management program in MS. Many activities of the Mississippi NPS Program are implemented through sub-grants to other agencies, organizations, and institutions. When §319 grant funds are used to fund work by other agencies, organizations, and institutions, sub-grants or contracts are set up between MDEQ and the other partnering agencies/organizations. These agreements specify how the funds will be used and how the overall project will ultimately help address NPS pollution efforts in Mississippi. Basin Management and NPS Branch staff work with partners to develop workplans, budgets, and sub-grant agreements. Staff also are responsible for maintaining project budgets, monitoring expenditures, tracking matching funds, approving invoices, performing project audits, and maintain an active communication with project partners to ensure all goals and outcomes are met.

Tracking and Reporting Progress

MDEQ is committed to transparency in its programs and building efficient tracking and reporting mechanisms into the NPS Program provides needed transparency to EPA and the public. Tracking and regularly reporting on projects, initiatives, and results, are critical activities of the Mississippi's NPS Program. These actions provide information to stakeholders on the work the program is supporting, meet reporting requirements for EPA, and ensure that all funded activities remain on schedule and within budget. Transparency is integrated into the Mississippi NPS Program in several ways, including making program progress reports and other documents available online, and making Basin Team and Watershed Implementation Team meetings open to the public. Examples of information tracked and reported include:

- Personnel attendance at meetings,
- Nutrient and sediment load reductions resulting from the Mississippi NPS Program,
- Entry of required data elements into EPA's GRTS database,
- Development of watershed-based plans,
- NPS Program success stories,
- Progress made in implementing §319 grant and sub-grant work plans, and
- Tracking and reporting on expenditures of §319 grant and sub-grant funds along with required matching funds or in-kind services.

Awareness, Education, and Outreach

The Mississippi NPS Program implements a variety of environmental education activities and programs. MDEQ contributes funding and information to many programs to promote awareness and education of NPS pollution while also investing staff resources to facilitate training whenever possible. It is recognized by the MDEQ that the level of success achieved in developing and implementing an effective NPS Program is greatly influenced by the level of stakeholder involvement both at the watershed and statewide levels and great focus is given to activities that promote consensus building and partnering. 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. Environmental awareness programs sponsored by MDEQ target a wide range of audiences including formal and informal educators, school aged children, private citizens, urban neighborhood groups, civic organizations, elected officials, landowners, communities, 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. Listed below are routine programs/activities implemented as part of the statewide NPS focused awareness, education and outreach program:

Environmental Education and Outreach Mobile Classroom – A mobile, interactive classroom activity targeted for Kindergarten through 5th grade students providing information about NPS pollution in watersheds and what people can do to improve water quality. Activities presented in the program align with the standards adopted by the Mississippi Department of Education.

Public Service Announcements – NPS messages and NPS workshop/event information are aired on radio and television stations throughout Mississippi. Other media utilized by MDEQ for NPS messages include newspaper, newsletter articles, etc.

Adopt-A-Stream – Workshops teach participants about watersheds, NPS pollution, land use, watershed delineation, water quality, and water quality indicators. Workshops are held in priority watersheds and various regions of Mississippi to promote NPS education. Meals and/or light refreshments will be served at these events.

In addition to the workshops, the program promotes the use of the *Storm Drain Marking Campaign* by providing an information packet and contact information to assist communities with storm drain marking projects. The packet includes examples of storm drain markers with a variety of pollution prevention messages, e.g. “No Dumping, Drains to River”. Also included are examples of a NPS informational doorknob hanger, a sample press release and a “how to” brochure on conducting a storm drain marking program.

Envirothon – The Envirothon High School Competition tests student knowledge about water, soils, forestry, wildlife, and current environmental issues each year. The competition measures success by student oral presentations made to a panel of judges where each team applies their knowledge and field experiences to a real-life environmental problem/situation. It also includes both written and field tests. 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. Meals and/or light refreshments will be served at these events.

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. 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 of 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. Meals and/or light refreshments will be served at these events.

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 water-related interactive booths and guided museum exhibits to learn about polluted runoff, wildlife, water use, groundwater, surface water, macroinvertebrates, and other water quality and ecosystem indicators.

Project Earth Teacher Workshops – Workshops teach participants about NPS pollution, water quality, conservation ecology, and environmental problems and solutions. MDEQ partners for

NPS workshops include universities and Soil and Water Conservation Districts in several regions of Mississippi. Meals and/or light refreshments will be served at these events.

Summer Ecology Day Camps – This summer camp exposes the 1st-6th grade students to various aspects of biology, environmental science and nonpoint source water pollution. The program is designed to increase the campers’ knowledge of natural resource conservation, entomology, recycling, soil and water conservation along with alternative energy and the proper use of scientific equipment. This education and training creates an awareness of NPS water pollution that will lead to habit and behavior changes to improve water quality in Mississippi.

Water Model Demonstration Talks and Field Days– MDEQ and other entities conduct water-model demonstration speeches at student and adult events/activities each year.

Community Growth Readiness – Formerly called Nonpoint Education for Municipal Officials (NEMO) is a presentation or workshop that is used by MDEQ and others to address water quality issues by linking land use and polluted runoff. Any county or city can use this 3-tiered strategy of natural resource -based planning, better site design, and storm water best management practices. This information helps communities with their development plans and encourages them to adopt ordinances that incorporate low -impact development, sustainable growth, and green infrastructure.

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.

Onsite Wastewater Disposal System Installation and Maintenance Education - MDEQ will continue to collaborate with the MSDH to reduce adverse impacts from individual on-site wastewater disposal systems (OSDS) through homeowner and installer education, regulation of system installation and repair, and decommissioning of failing systems.

Agricultural NPS Implementation Assistance – The Mississippi Soil and Water Conservation Commission (MSWCC) supports the NPS program by providing assistance to conservation districts to implement educational and demonstration projects. Funds are used to support staff time. 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.

Coastal Zone Act Reauthorization Amendments (CZARA) - Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990 requires states and territories with approved coastal zone management programs that receive funding under Section 306 of the Coastal Zone Management Act (CZMA) to establish and implement Coastal Nonpoint Pollution Control Programs (CNPCP). The intent is for these programs to address nonpoint source

pollution sources that could contribute to water quality concerns in coastal waters. To provide direction on the scope of nonpoint source issues that should be addressed in the CNPCP, EPA developed guidance under Section 6217(g) in the form of Management Measures (MMs) for each category of coastal nonpoint source pollution. Management Measures are best explained as those actions or activities that are economically feasible, can mitigate or alleviate nonpoint source pollution, and achieve the maximum amount of reduction through implementation of the best available nonpoint source management practices. The use of CZARA set-aside funds will be used for coastal project(s) and/or activities that will address the established management measures.

Waste Pesticide Disposal Program - The Mississippi Legislature passed a law in 1993 directing that pesticide registration fees, or a portion of the fees, be used to fund the waste-pesticide disposal program. This law went into effect on July 1, 1993 and was repealed on July 1, 1998 (Miss. Code Ann. § 69-23-301). During the time this law was enacted, MSU's Extension Service worked in conjunction with the Mississippi Department of Agriculture and Commerce (MDAC) Bureau of Plant Industry to run the program and conduct numerous pesticide disposal events. After the law was repealed in 1998, there was no waste pesticide disposal program until MDEQ allocated funding through the Nonpoint Source (NPS) Program under §319 of the Clean Water Act. The program began again in 2000 and is implemented by the MSU Department of Agricultural and Biological Engineering and the MSU Extension Service. Each event is publicized in the surrounding counties and thus usually attracts farmers from nearby areas. Chemicals are weighed on-site on collection day, and the contractor bases their disposal costs on a "per pound basis", in addition to a "base-setup fee." 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 disposing of products in a safe and efficient manner. Events will be held as long as funding is available for the disposal of products. Events will be targeted in areas of high agricultural productivity throughout the Mississippi Delta region and in priority watersheds.

To assist with the implementation of the NPS Program, track projects, and meet federal reporting requirements, grant funding is used to support programmatic data management needs.

Strategies, Tools, and Knowledge Transfer

As the landscape continually changes and evolves, so does our knowledge of how activities on the landscape affect water management. This constant state of change requires management programs to continually update their strategies for managing NPS impacts. Strategies can be developed to address types of pollutants like nutrients or they can be broader in scope to address entire categories of NPS pollution like the stormwater management in urban settings. By continuing to produce and update management strategies, it helps the NPS Management Program address water resource concerns in a consistent, transparent way while also allowing for results to be communicated back to stakeholders. The ability to develop strategies to address either the continuing impact of NPS pollution or emerging sources, helps the program adapt to a constantly changing and evolving future landscape. Funding from this grant may be used, as needed to continue the support and update of MS's nutrient reduction strategies as well as the continued

development and enhancement of the decision support tools that provide a foundation for the program.

Nutrient Reduction Strategies - In recent years, §319 NPS funding has been used increasingly to support nutrient reductions in large watersheds. The strategy behind this approach is to use the committed §319 resources to attract additional leveraging opportunities. Combining these funds together creates a greater potential to achieve quantifiable reductions in nutrient concentrations/loadings. The Mississippi NPS Program incorporates the [Mississippi Coastal Nutrient Reduction Strategy](#), [Mississippi Delta Nutrient Reduction Strategy](#), the [Mississippi Uplands Nutrient Reduction Strategy](#), and the statewide strategy [Mississippi's Strategies to Reduce Nutrients and Associated Pollutants](#), in the development and implementation of NPS projects. The integration of these three regional strategies into the combined statewide strategy permits consistent, compatible, and coordinated watershed management plans to be developed and implemented statewide while addressing the distinct regional differences that exist for nutrient sources across the state. In implementing these strategies, Mississippi continues to work in conjunction with the Mississippi River Gulf of Mexico Watershed Nutrient Task Force to achieve nutrient reductions and work collaboratively to reduce the size of the hypoxic zone in gulf waters. Work under this grant will continue to support implementation and refinement of these strategies.

Decision Management Tools - The key to good management decisions is having a solid foundation upon which to make those decisions. Across the landscape of MDEQ, decision support tools are used to steer programs and make key water management decisions. These tools can take the form of water quality models, decision trees, biological indices, and assessment analysis support tools just to name a few. Within the Mississippi NPS Management Program, there are a couple of key decision support tools that are used to guide program decisions and prioritize watersheds for implementation projects. Not only does the program use these tools in-house to help inform where §319 funds are directed, these tools have also been used by our partners to help inform management decisions for their respective organizations. The Mississippi Watershed Characterization and Ranking Tool (MWCRT) and the Basin Management Planning Application are fundamental components of Mississippi's NPS Management Program decision making process. Work under this grant will continue to support the implementation, refinement, and enhancement of these tools.

Knowledge Transfer - A large part of successfully managing NPS impacts to receiving waters is helping individuals understand what they can do to mitigate those impacts. In today's society, people often turn to the internet to research a problem before picking up a phone and trying to contact a person who may know the answer or who can, eventually, get them in contact with someone who knows the answer. This scenario is why knowledge transfer is critical to successful NPS management. Knowledge transfer can be realized in many forms: training courses, seminars, online tools and guidance documents/materials. It can also be realized through the use of social medial platforms like Twitter and Facebook and media campaigns. To be truly successful, all of these mechanisms should be utilized to provide the right information, in the right format, providing the needed amount of detail for the targeted audience. For these reasons, knowledge transfer remains a critical component of Mississippi's NPS management

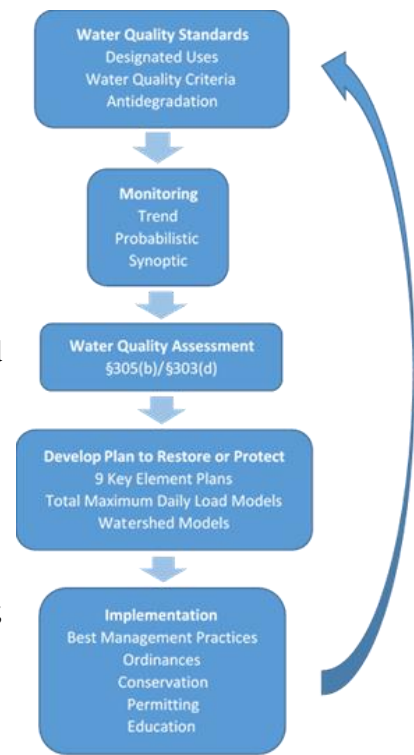
program. Work under this grant will continue to support the implementation, refinement, and enhancement of mechanisms and methods to support knowledge transfer.

Schedule: The overall completion date is consistent with the end of the grant period which is September 30, 2026. Funding to support the Program Implementation element represents 33% of the overall grant.

MS NPS Management Plan Goals	Program Implementation-Element 2
Goal 1: Effectively implement the Mississippi NPS Management Program.	
Goal 2: Implement a strategic Awareness, Outreach, and Education Program.	

Element 3: Planning

The Planning element of the Mississippi NPS Program is the work area under which collaborative decisions are made about where in the state to focus NPS pollution management efforts, what those efforts will be, identify opportunities to leverage resources (either technical or financial), and, ultimately, prepare watershed plans for those priority watersheds where management efforts will be implemented. In order to make sound, scientific decisions, the Mississippi NPS Program uses products or outcomes from the state’s overall water management process. This process is designed to be iterative and adaptive. Programs within MDEQ along with resource agency partners, both federal and state, non-profits, institutions, and local stakeholders work collectively to ensure Mississippi has healthy, productive waters now and into the future. The water management process crosses multiple program areas and includes water quality criteria development and refinement; monitoring; assessment; planning for protections and/or restoration; and implementation. Much of the work done in support of the water management process fits under planning activities supported by the NPS Program. In order to make informed management decisions and direct project funding to areas where there is the most need and the best opportunities for success, grant funds may be used to support planning activities that strengthen the water management process. Funds may be used to support the following activities that are included in the water management process:



Water Management Process

Water Quality Standards - One of the tools used to evaluate the health and safety of Mississippi water resources is [water quality standards \(MDEQ, 2021\)](#). Water quality standards outline numeric (or narrative) thresholds for individual water quality parameters used to measure water quality. The state identifies water quality standards that are necessary to support how the water is used, otherwise referred to as designated uses. NPS pollution management may be used to

improve water quality in water bodies that do not meet water quality standards so these uses may be attained. Therefore, the Mississippi NPS Program supports development and revision of state water quality standards.

Water Quality Monitoring - There is a saying, “measure what matters.” Since improving and/or protecting water quality is the focus of the Mississippi NPS Program, water quality monitoring is a necessary part of the program. The Mississippi NPS Program supports the water quality monitoring programs of MDEQ and its partners. Water quality monitoring supported by the Mississippi NPS Program includes collecting measurements of physical and chemical characteristics of water samples, conducting surveys of aquatic communities, and collecting information about water resources.

All MDEQ monitoring funded by EPA grants is carried out under QAPPs prepared using *EPA QAPP Guidelines*. Monitoring activities conducted by MDEQ for parameters that are under the *Mississippi Water Quality Standards* are conducted in accordance with the *Mississippi Consolidated Assessment and Listing Methodology (CALM)* when possible. Laboratory procedures and data management are covered under approved MDEQ SOPs. Data collected in conjunction with the USGS is entered into the NWIS data system and is publicly available via their website. The MDEQ maintains a quality management plan (QMP) for data management and prescribed procedures within the organization and the NPS Program will continue to work within QMP guidelines.

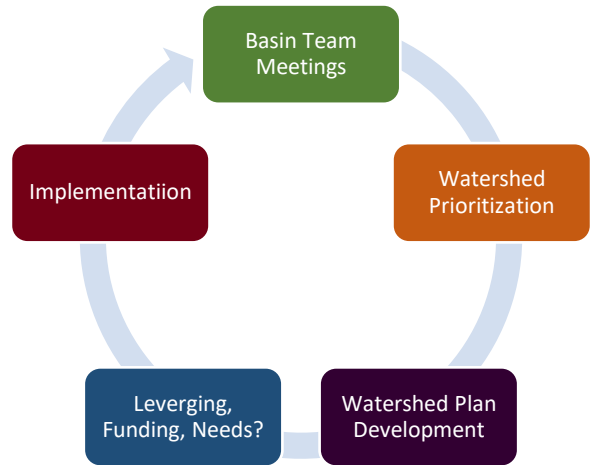
Water Quality Assessment - Section 319 requires that states identify water bodies where NPS pollution causes impairment of water quality. This is done as part of the biennial assessment of the water quality of state water resources. The biennial assessment of water quality of state water resources is required by Clean Water Action Section 305(b). This biennial water quality assessment has three purposes: identify those waters where water quality does not support their designated uses, identify the cause(s) of the poor water quality (i.e., pollutant), and identify the pollutant source(s). In order to determine the status of waters, work must also be done to develop tools and other activities to support those assessments. In Mississippi, an index of biotic integrity has been developed to assess stream health. This tool is also used to help measure incremental improvement and ultimate attainment of stream health after implementation of conservation measures in watersheds. Another assessment tool used is the stressor identification process. This process helps to determine the environmental stressor that is contributing to the impairment in biologically impaired streams thereby helping to target implementation strategies for watershed improvement.

Water Quality Modeling - There are a variety of computer models available to help in the management of NPS pollution. These models can be used to estimate pollution load reductions once best management practices and conservation measures are implemented. Some can even provide estimates of NPS pollutant loads in watersheds before conservation is implemented and then provide an estimate of how much of the pollutant can be removed (load reduction) once BMPs are implemented. These models are very helpful because they can provide estimates of pollutant loads before and after implementation and can be used to show how successful implementation of NPS conservation practices can be.

This work is consistent with and supplements, but does not duplicate, commitments in the *FY 2022 Section 106 grant Work Plan for TMDL, Monitoring, and Assessment Program Elements*. MDEQ has a proven record of successfully managing and implementing water quality monitoring and assessment projects. MDEQ works to ensure that tasks are carried out as outlined in project work plans and carefully manages grant funds to make certain that cost effective measures are implemented.

The Basin Management Approach

The key strategy used in the Mississippi NPS Program for collaboration among agencies, organizations, institutions, and stakeholders, is the MDEQ Basin Management Approach (BMA). The mission of the BMA is to foster stewardship of Mississippi's water resources through place-based, collaborative water resources planning, education, protection, and restoration initiatives. The BMA provides a vehicle for bringing people together to collaborate on identifying and addressing a variety of water resources concerns, including NPS pollution. The building blocks of the BMA are Basin Groups, Basin Teams, and Watershed Implementation Teams.



To fully address water resources concerns as a state, MDEQ recognizes it's going to require working through many pathways and approaches to both protect high quality waters and restore those waters that have been impacted over time. The Basin Management Approach was designed as a way to bring representatives from all water resource management programs, both regulatory and non-regulatory; federal partners, researchers, local governments, and the public together into a single forum where these representatives can work in tandem to prioritize and address Mississippi's water resources concerns. This approach allows these groups to work within their respective authorities on common issues to achieve common goals in the same places. By focusing time, attention, and resources (where possible) as a collective group, more actual improvement can be achieved, and these achievements benefit everyone.

In concert with these team meetings, and to incentivize stakeholder participation, project funding may be used to purchase food and other refreshments along with providing support for renting facilities in which to host those events. MDEQ plans to host two Basin Team meetings per year in each basin group during the time frame these GY 2022 funds will be used. Light refreshments and/or meals/beverages will be provided for Basin Team members and/or their designees and/or other meeting participants (speakers/landowners/project officers/sub-grantees/subject matter experts, etc.) The purpose of these meetings is to provide coordination opportunities, collectively work to identify shared priorities, prioritize watersheds for plan development and allow members to leverage funding where available. Agenda, location, length and timing of events TBD.

Watershed Prioritization

The Basin Management Approach brings together different groups with shared goals of improving water resources while recognizing there are still limited financial resources available to implement conservation practices and other activities to improve water quality. Because of this challenge, a process was developed to help prioritize watersheds and target where resources and work efforts are implemented in order to obtain maximum benefits. Working within the Basin Management Approach and the partners that participate on Basin Teams, members work collaboratively to prioritize watersheds and target the watersheds that represent the highest priority for either restoration or protection for watershed plan development and conservation practice implementation.

Watershed Based Plans

For each watershed identified as a priority for NPS pollution management through the Mississippi NPS Program, a Watershed Implementation Team (WIT) is formed. This team is generally composed of local stakeholders, resource agency partners, and any other interested party located within the watershed boundaries. The first responsibility of a WIT is to help gather the necessary information and write a Watershed-based Plan (WBP) for their watershed. Information used in preparing WBPs includes the results of water quality assessments, stressor identification studies, water quality modeling, and TMDLs. This information guides WIT decisions on the types and location of restoration and protection activities to plan in a watershed. In watersheds that have TMDLs, they are used to provide water quality restoration objectives and pollutant load reduction goals for the WBP.

During this grant period 9 Key Element watershed plans will be submitted to EPA: Upper Piney Creek, Fuller Creek-Town Creek, and Muddy Bayou-Opossum Bayou watersheds. In addition, funding will be allocated to continue the development of WBPs in priority watersheds to develop a pipeline of project ready plans to be funded in future grant years. These plans will be submitted to EPA for comment and approval. This allocation of funds to support the development of WBPs under this grant was done in response to EPA's comments requesting MDEQ work to develop more implementation ready, approved watershed plans.

Schedule: The overall completion date is consistent with the end of the grant period which is September 30, 2026. Funding to support the Planning element represents 9% of the overall grant.

MS NPS Management Plan Goals	Planning-Element 3
Goal 1: Use Partnerships to leverage resources for NPS management.	
Goal 2: Support the MDEQ Water Quality Management Process.	

NPS Project Fund Allocations

Element 4: Project Implementation

This element of the Mississippi NPS Program encompasses those activities undertaken when watershed plans are implemented in targeted priority watersheds. As discussed above, WBPs identify recommended NPS pollution management activities needed to achieve the NPS pollution management goals for a targeted watershed. The NPS pollution management/conservation practices, local NPS pollution awareness and education, and water quality monitoring activities that are recommended in the WBPs are implemented through projects. These NPS pollution control projects are developed and managed by agencies, organizations, or institutions active in the watershed. Through implementation of projects, NPS pollution sources are mitigated, and water resources are improved and protected. While WBPs can, and often do, deal with multiple categories of NPS pollution in order to address all of the water resources concerns in the watershed; projects usually address a single NPS pollution category such as agriculture or urban stormwater. These projects, when implemented in concert following the practices identified in the WBPs, are what ultimately work together to result in water quality improvements. Although projects may focus on one specific category, or landuse type, they can identify practices to reduce multiple pollutants.

All projects should include, as appropriate, NPS pollution management activities, water quality monitoring, and awareness and education activities. The WBPs developed for the targeted priority watersheds identify NPS pollution best management practices (BMPs) that control the NPS pollutant(s) of concern in the Targeted Watershed. Projects for demonstrating or implementing NPS pollution BMPs will usually focus on the practices identified in the WBP. However, NPS pollution BMPs not specifically named in the WBP can be included in projects funded by §319 sub-grants, as long as they are appropriate for the conditions and NPS pollution sources in the Targeted Watershed, and will mitigate the pollutant(s) of concern.

Role of Watershed Implementation Teams

Once a WBP is written, and has been accepted by EPA, the role of the WIT is to facilitate implementation of that WBP through projects. In this role, WITs are a vehicle for getting NPS pollution management practices on the ground where they are needed in their Targeted Watersheds, while bringing natural resources work and federal money into local economies. The WITs provide coordination and collaboration avenues for implementation of NPS pollution management practices that were identified in the watershed plans. To this end, WITs build capacity by involving local governmental agencies, non-governmental organizations, and local citizens in the effort to implement projects. Members participating in WITs can work together to identify opportunities for pooling technical and financial resources in projects and facilitate formation of working groups within the team to focus on different aspects of WBP implementation.

Workplans and Sub-grants

Section 319 sub-grants can be used to fund a wide variety of activities, or projects, related to management of NPS pollution, and these sub-grants can be made with partnering agencies, organizations, local governments, or institutions. The work covered can include training programs, water quality studies, demonstration projects for a wide variety of practices that control NPS pollutants of interest, and cost share to individuals for implementing practices that control NPS pollution. Projects selected for §319 sub-grant funding must be implemented in a targeted priority watershed. Projects must also include work that is consistent with the activities identified in the approved 9 key element watershed plan for that targeted priority watershed.

To implement the nutrient/pollutant reduction strategy, §319 NPS funding will be used to support projects in all regions of the state. The projects will focus on watersheds with recently developed and approved WBPs so that achievable load reductions can be quantified through pre- and post-implementation water quality monitoring. Implementation of the strategies in these watershed projects will provide additional, cost-effective information related to achievable results and costs.

FY22 Watershed Projects – Funds from this grant will be used to implement best management practices and NPS control measures along with awareness, outreach, and education activities as identified in approved 9 Key Element watershed plans in the following watersheds: Upper Piney Creek Watershed (080302060704), Fuller Creek-Town Creek Watershed (031601011301), and Muddy Bayou Watershed (080302020403).

Upper Piney Creek Watershed (HUC 080302060704), Yazoo County, MS

The Upper Piney Creek Watershed is in the Northeastern portion of Yazoo County in North Mississippi covering approximately 31,154 acres. According to the 2019 National Land Cover Database (NLCD), the landuse within this watershed is comprised of approximately 64% forestland, 20% pastureland, 9% cropland, and 7% other (water, scrub/barren, wetland, and urban).

The water-use classification for all water bodies in this watershed, as established by *Regulations for Water Quality Criteria for Intrastate, Interstate, and Coastal Waters*, is for *Fish and Wildlife*. Waters with this classification are intended for fishing and propagation of fish, aquatic life, and wildlife. Waters that are classified as *Fish and Wildlife* should also be suitable for secondary contact recreation, which is defined as incidental contact with water including wading and occasional swimming.

Waterbodies within the Upper Piney Watershed have a long history with Mississippi's Section 303(d) List of Impaired Water Bodies. Piney Creek (MS366E) was first included in Mississippi's Section 303(d) List of Water Bodies in 1996. This segment remained on the list until TMDLs for sediment and pathogens were developed for Piney Creek.

Piney Creek is the mainstem drainage for the Upper Piney Creek Watershed. This stream is included (segment MS366E) in the regional sediment [Total Maximum Daily Load Yazoo River](#)

[Basin Hills Region](#) . The State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters regulation does not include a numerical water quality standard for aquatic life protection due to sediment. The narrative standard for the protection of aquatic life is sufficient for justification of TMDL development but does not provide a quantifiable TMDL target. The target for this TMDL is based on reference sediment yields developed by the Channel and Watershed Processes Research Unit (CWPRU) at the National Sedimentation Laboratory (NSL). This TMDL calls for a 99% reduction in sediment.

Nonpoint loading of sediment in a water body results from the transport of the material into receiving waters by several processes including mass wasting, head cutting, gullyng, and sheet and rill erosion. Sources of sediment come from improper agricultural and silvicultural practices as well as from a plethora of other improper land-use activities (e.g. construction, mining, channel alterations).

There is also a pathogen TMDL for Piney Creek : [Fecal Coliform TMDL for Piney Creek Yazoo River Basin Yazoo County, Mississippi](#) . There are no facilities permitted to discharge pathogens in the Upper Piney Creek watershed. To address nonpoint sources of pathogens, the TMDL called for education and outreach to landowners and implementation of best management practices that address pathogen runoff from the landscape.

The watershed plan will identify best management practices along with education and outreach efforts that can be implemented to address both sediment and pathogen sources in the watershed. Total project funding allocated for this project is **\$360,000**. A complete budget will be included in the watershed-based plan submitted to EPA for approval.

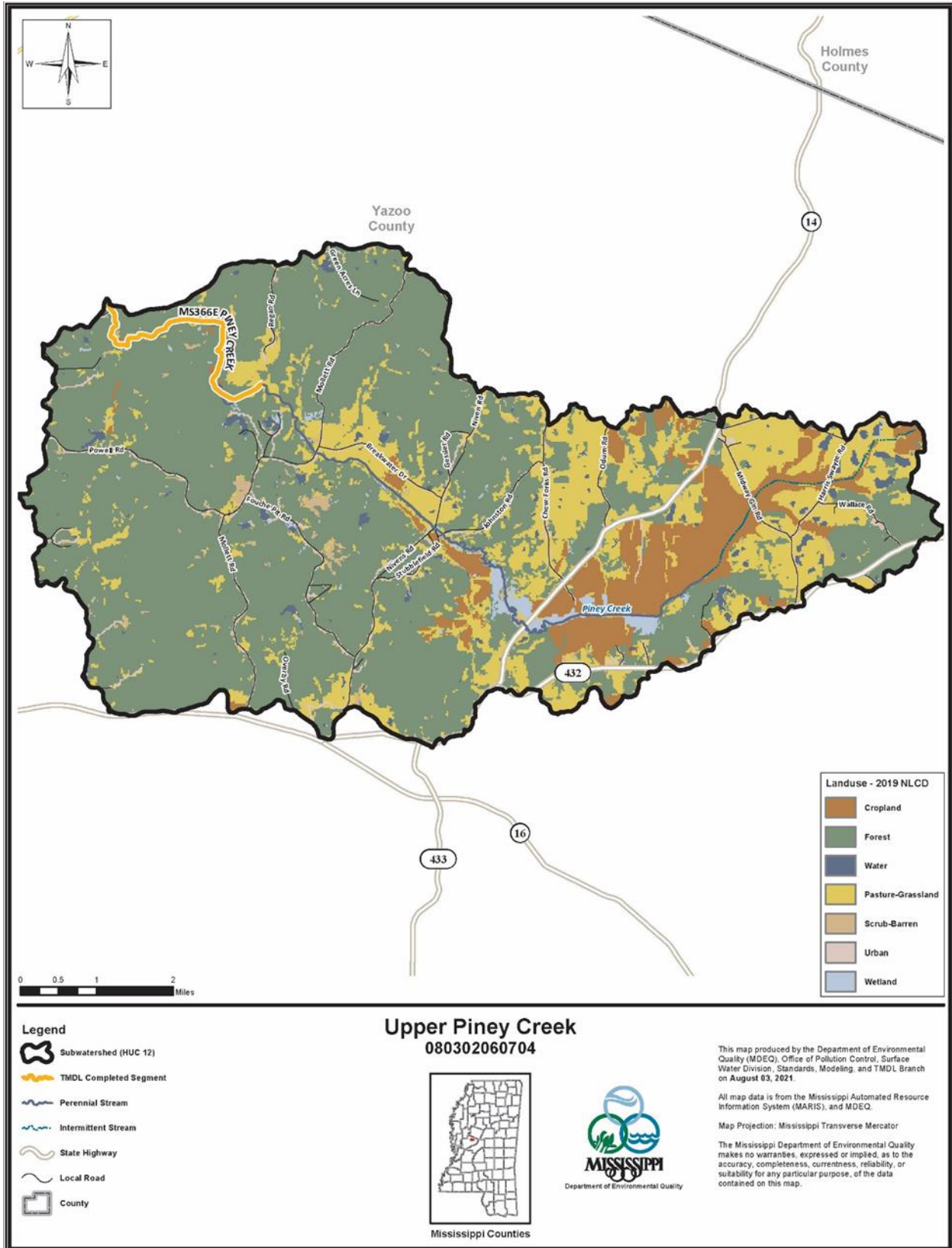


Figure 1: Impaired waters in Upper Piney Creek Watershed

Fuller Creek-Town Creek Watershed (HUC 031601011301), Clay and Monroe Counties, MS

The Fuller Creek-Town Creek watershed is located in Eastern Clay County and Southwestern Monroe County in north Mississippi covering 20,346 acres. According to the 2019 National Land Cover Database (NLCD), the landuse within this watershed is comprised of approximately 38% cropland, 43% pastureland, 8% wetlands, and 11% other (water, forestland, urban, and scrub-barren).

The water-use classification for all water bodies in the Fuller Creek-Town Creek Watershed, as established by *Regulations for Water Quality Criteria for Intrastate, Interstate, and Coastal Waters*, is for *Fish and Wildlife Support*. Waters with this classification are intended for fishing and propagation of fish, aquatic life, and wildlife. Waters that meet the *Fish and Wildlife Support* criteria should also be suitable for secondary contact, which is defined as incidental contact with water including wading and occasional swimming.

MDEQ has conducted statewide biological monitoring using benthic macroinvertebrates as the indicator to develop a regionally calibrated *Index of Biological Integrity (IBI)* for Wadeable streams. This index, known as the *Mississippi Benthic Index of Stream Quality (M-BISQ)*, was used in the biological assessment of the State's Wadeable streams and rivers including Town Creek and Fuller Creek. Based on the *M-BISQ* scores, both Fuller Creek and Town Creek water bodies were determined to be impaired.

With the development and publication of smaller HUC 12 watersheds, Mississippi developed an updated process to identify assessed segments that would correspond to newer HUC 12 watershed boundaries and numbers. In 2016, Town Creek impaired segment MS011T was assigned a new segment ID that was in compliance with the new HUC 12 centric naming protocol. Segment MS011T, in its entirety, was updated as 804111. This segment of Town Creek can be found on the *Mississippi 2020 Section 303(d) List of Water Bodies with an identified impairment cause of Biological Impairment (MDEQ, 2020a)*. Fuller Creek (segment 804112) was assessed and included on the *Mississippi 2016 Section 303(d) List of Water Bodies (MDEQ, 2016a)*. The identified cause for this listing is biological impairment. A stressor identification study is scheduled for both Town Creek and Fuller Creek to determine the most likely cause(s) of the impairment. Once that determination is made, TMDLs will be completed.

The watershed plan will identify best management practices along with education and outreach efforts that can be implemented to address pollutant sources identified by the stressor in the watershed. Total project funding allocated for this project is **\$400,000**. A complete budget will be included in the watershed-based plan submitted to EPA for approval.

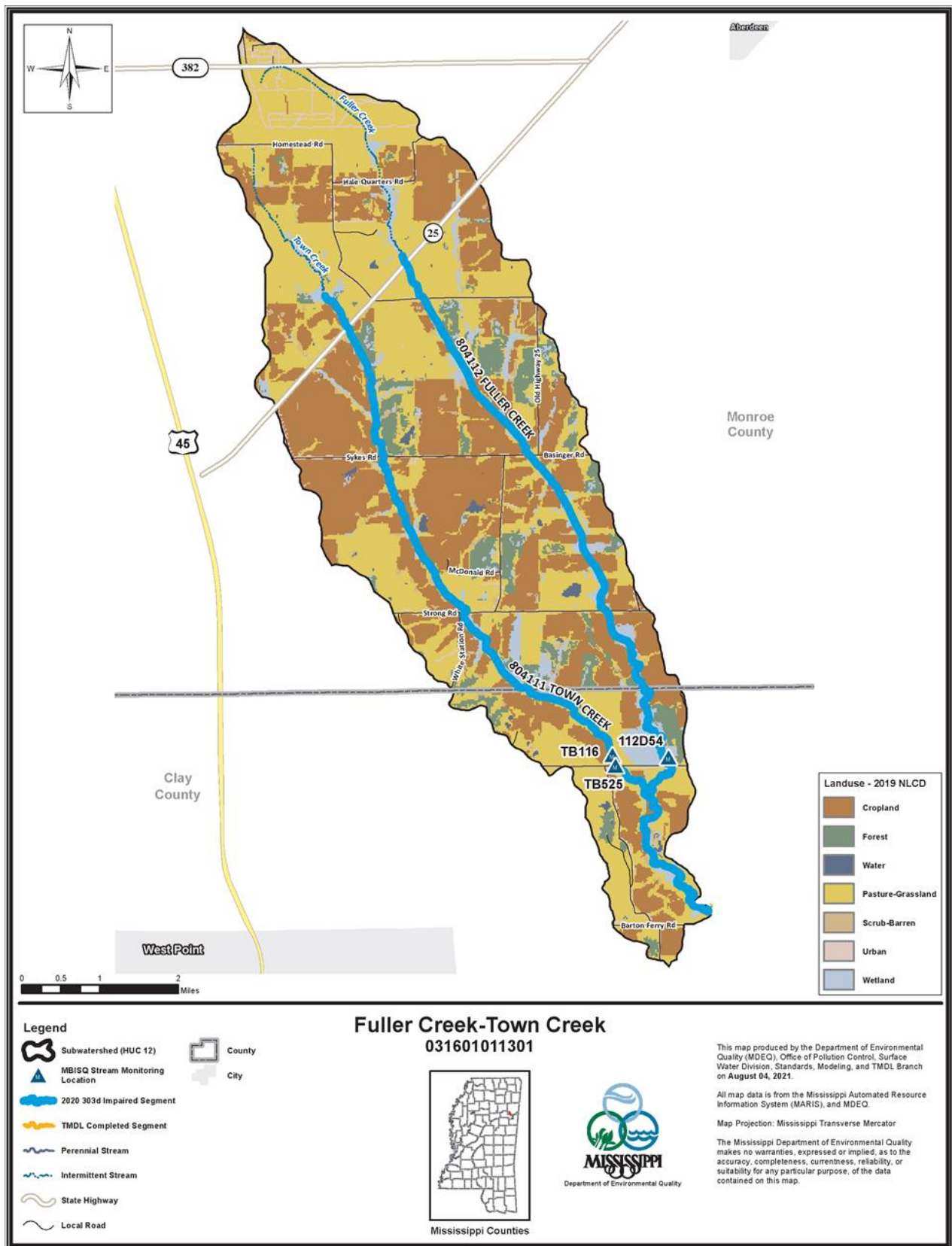


Figure 2: Impaired waters in the Fuller Creek-Town Creek Watershed

Muddy Bayou Watershed (HUC 080302020403), Tallahatchie County, MS

The Muddy Bayou Watershed is in the south-central part of Quitman County and northwestern part of Tallahatchie County in North Mississippi covering approximately 32,731 acres. According to the 2019 National Land Cover Database (NLCD), the landuse within this watershed is comprised of approximately 78% cropland, 21% wetlands, and 2% other (water and urban).

The water-use classification for all water bodies in this watershed, as established by *Regulations for Water Quality Criteria for Intrastate, Interstate, and Coastal Waters*, is for *Fish and Wildlife*. Waters with this classification are intended for fishing and propagation of fish, aquatic life, and wildlife. Waters that are classified as *Fish and Wildlife* should also be suitable for secondary contact recreation, which is defined as incidental contact with water including wading and occasional swimming.

While this watershed does not have an active listing on Mississippi's Section 303(d) List of Impaired Streams, Muddy Bayou serves as drainage for the entire watershed which ultimately empties directly into Opossum Bayou. As such, Muddy Bayou is a contributing source to the nutrient and sediment TMDLs that have been developed for Opossum Bayou (MS269E). Most streams in the Muddy Bayou watershed are intermittent except for Muddy Bayou and several drainage canals. Muddy Bayou meanders from the northern areas of the watershed moving east along the boundary and finally draining into Opossum Bayou at the mouth of the watershed (Figure 3).

Opossum Bayou (MS269E) is included in the regional sediment TMDL that was developed for the Yazoo River Basin: [*Total Maximum Daily Load Yazoo River Basin Delta Region for the Delta Region*](#). The State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters regulation does not include a numerical water quality standard for aquatic life protection due to sediment. The narrative standard for the protection of aquatic life is sufficient for justification of TMDL development but does not provide a quantifiable TMDL target. The target for this TMDL is based on reference sediment yields developed by the Channel and Watershed Processes Research Unit (CWPRU) at the National Sedimentation Laboratory (NSL). This TMDL calls for an 80 to 84% reduction in sediment.

Sources of sediment in a water body result from the transport of the material into receiving waters by several processes including mass wasting, head cutting, gullyng, and sheet and rill erosion. These sources come from improper agricultural and silvicultural practices as well as from a plethora of other improper land-use activities including construction, mining, and channel alterations.

Opossum Bayou (MS269E) has an additional TMDL for nutrients: [*Total Maximum Daily Load Total Nitrogen and Total Phosphorus for Opossum Bayou*](#). Mississippi does not have water quality standards for allowable nutrient concentrations. MDEQ currently has a Nutrient Task Force (NTF) working on the development of criteria for nutrients. The TMDL identified an annual concentration of 1.06 mg/l as an applicable target for Total Nitrogen (TN) and 0.16 mg/l for Total Phosphorus (TP) for water bodies located in the west side of the Delta. This TMDL calls for TP to be reduced by 84.7% and TN to be reduced by 94.4%.

The watershed plan will identify best management practices along with education and outreach efforts that can be implemented to address both sediment and nutrient sources in the watershed. Total project funding allocated for this project is **\$345,705**. A complete budget will be included in the watershed-based plan submitted to EPA for approval.

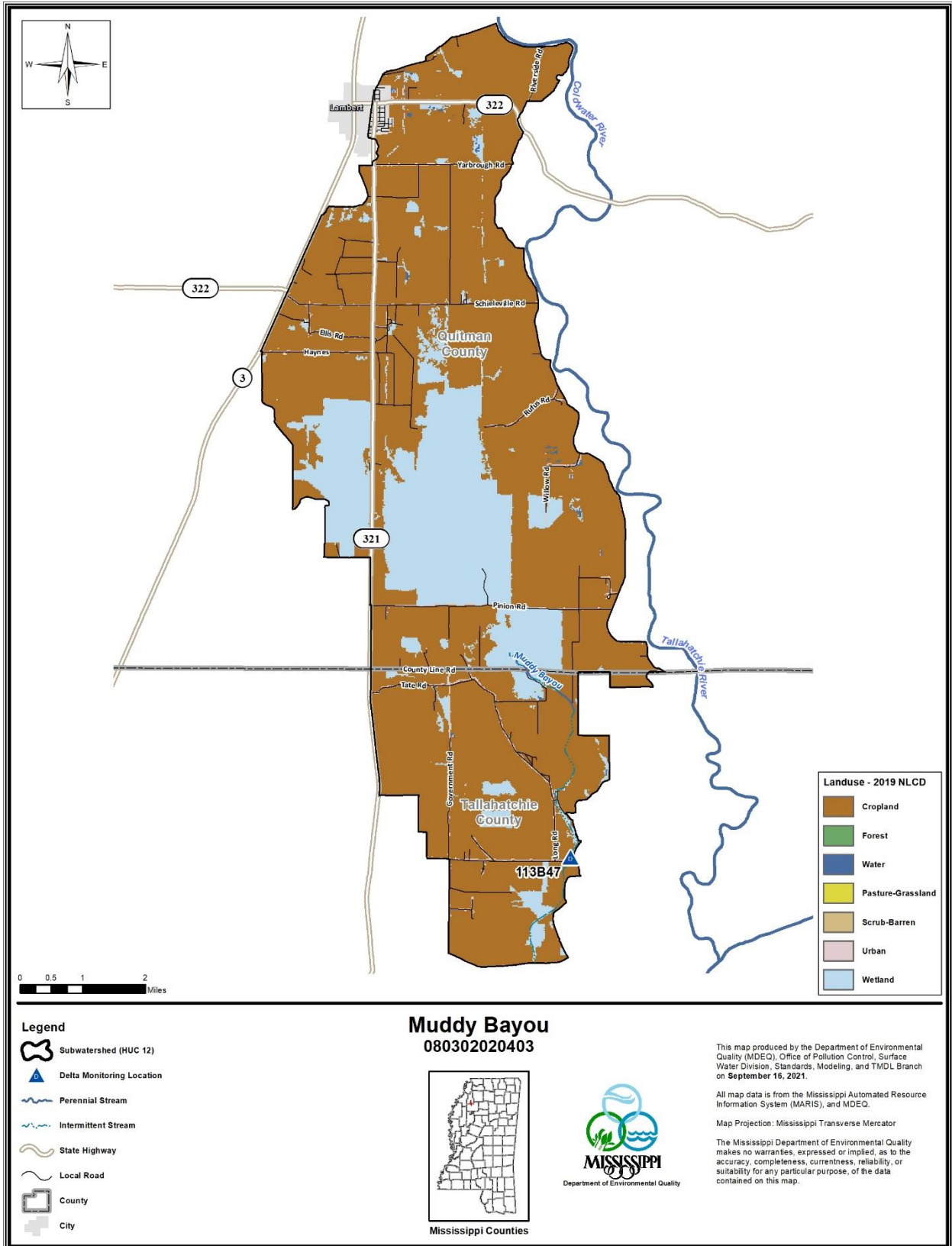


Figure 3: Landuse in the Muddy Bayou Watershed

Proposed Project Allocations:

Upper Piney Creek	\$360,000
Fuller Creek-Town Creek	\$400,000
Muddy Bayou	<u>\$345,705</u>
Total	\$1,105,705

Project Reporting

Once grant funding is received and sub-grants are in place to initiate work, project details are entered into EPA’s GRTS data system. The approved watershed plans are attached as supporting documentation into GRTS along with annual reporting of progress, expenditures, and load reductions. At the end of the project, the final report is also uploaded into GRTS. In addition to meeting all of the GRTS reporting requirements, all project partners submit detailed quarterly progress reports that provide updates on completed milestones and expenditures along with any pictures of BMPs or results from any education or outreach events conducted. If anything happened that would result in a delay of the project, this is also reported on the quarterly progress reports ensuring that project managers and our partners can work together to develop solutions and ensure the project meets goals and is completed within grant timelines. Project summaries are often included as part of the NPS annual report and the NPS Program works with partners to use Basin Team Meetings, field days, and watershed team meetings as additional opportunities to provide presentations and project updates. At the conclusion of the project, final reports are developed to address each component of the work funded, load reductions are calculated where BMPs are implemented and, when possible, project summary scorecards are developed as an easy, 1-page, summary of the work completed in the watershed.

Schedule: The overall completion date is consistent with the end of the grant period which is September 30, 2025. Funding to support the Project Implementation element represents 35% of the overall grant.

MS NPS Management Plan Goals	Project Implementation-Element 4
Goal 1: Promote Implementation of restoration (or protection) for priority watersheds.	
Goal 2: Implement applicable practices that control and reduce NPS pollution.	

Element 5: Project Implementation Support

This element encompasses those activities of the Mississippi NPS Program that support implementation projects in targeted priority watersheds. The Mississippi NPS Program has established partnerships with multiple agencies, organizations, and institutions at the state or basin level as part of Program Implementation. Technical and financial support of the local, project-specific activities of these partners is considered part of Mississippi NPS Program

Support for Project Implementation. Funding under this element can be used to support a range of activities as long as the outcomes ultimately address work needed to support project goals. Often, this funding ensures technical assistance is available at the local watershed level from partner agencies, organizations, and institutions. Some activities supported include partnership and support from local soil and water conservation district staff as well as NRCS technical assistance to design and implement NPS best management practices. These funds ensure these subject matter experts can participate in watershed implementation team meetings. This element also includes activities associated with monitoring to evaluate the effects of local projects on water quality.

Funding is also used to support partnership agreements with the USGS to subsidize on-going monitoring in watersheds where NPS pollution demonstration projects are either on-going or where implementation is complete and follow-up monitoring is needed to measure water quality benefits achieved as a result of BMP implementation. The partnership between the Mississippi NPS Program and the USGS is unique in that the USGS leverages staff time to support monitoring as well as assessment and data analysis efforts that support shared water resource management goals with the NPS program. As part of these efforts, USGS staff participate in watershed monitoring and data analysis efforts that can be used to measure the success of NPS conservation practice implementation. This work can also be used to further the scientific understanding of different systems, determine new ways to establish monitoring protocols and load reductions, and collect data to refine individual BMP effectiveness/efficiency estimates for practices implemented on Mississippi soils, watersheds, and unique drainage systems like are found in the Mississippi River Alluvial Plain.

All water quality data collected using §319 funds is conducted in accordance with EPA-approved QAPPs and the results are uploaded into EPA national data systems as per the requirements of grant. Data collected in collaboration with the USGS are made available in the USGS’s National Water Information System (NWIS). All data available in NWIS can also be obtained from the National Water Quality Monitoring Councils Water Quality Portal. This portal allows the public to access water quality data from both the EPA and USGS water quality data systems.

Schedule: The overall completion date is consistent with the end of the grant period which is September 30, 2026. Funding to support the Project Implementation Support element represents 17% of the overall grant.

MS NPS Management Plan Goals	Project Implementation Support-Element 5
Goal 1: Collect and analyze data related to NPS pollution control and reduction.	
Goal 2: Collaborate with key partners to provide technical assistance in priority watersheds.	

Table 1: FFY 2022 Section 319 Grant Budget Summary

Table 1-Program Budget Summary for FY22 Grant	
Object Class Category (Non-construction)	Total Budget Period Cost
Personnel	\$406,403
Fringe Benefits	\$136,145
Travel	\$21,340
Equipment	\$13,200
Supplies	\$17,423
Contractual	\$490,000
Construction	\$0
Other	\$4,032,744
Total Direct Charges	\$5,117,255
Indirect Costs	\$267,745
Total Recipient Share (Match 40%)	\$2,154,000
Total (Share: Recipient 40% Federal 60%)	\$5,385,000
Program Income	\$0
Total EPA Amount Award	\$3,231,000
Total Grant Award	\$5,385,000