ALABAMA
NONPOINT SOURCE MANAGEMENT PROGRAM

PARTNERING FOR CLEAN WATER
AND A
SAFE AND HEALTHY ENVIRONMENT

Alabama Nonpoint Source Management Program

Version 010614

Pursuant to the:
Clean Water Act (1977, as amended);
Alabama Water Pollution Control Act (1975, as amended);
Clean Water Act Section 319(b) State Management Programs;
Clean Water Act Section 319(h) Grant Program; and
USEPA Section 319 Nonpoint Source Management Program Grant Guidelines

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EPA United States Environmental Protection Agency

ADEM Alabama Department of Environmental Management
adem.alabama.gov

FORWARD

The Alabama Department of Environmental Management (ADEM) is pleased to present this update of the Alabama Nonpoint Source Management Program. This document parallels the Department's mission to assure for all citizens of the State a safe, healthful and productive environment. Alabama is blessed with a wealth of natural resources which provide a multitude of environmental and economic benefits for its citizens. The Department is fully committed to protecting and enhancing the environmental resources for all citizens who live, visit, recreate, work, or invest in the state.

Alabama's water resources include approximately 47,072 miles of perennial rivers and streams, 30,170 miles of intermittent streams, 14 major river basins, and 550 trillion gallons of groundwater. In addition, the greatest yield of water per square mile in the country is found in the Mobile Basin. The state's unique ecological, geological and physiographic regions along with its species diversity all play a vital role in the proper functioning of our state's unique ecosystems and natural heritage.

As the state's population continues to increase, so do the societal demands on water resources. Nonpoint source pollution can negatively impact surface water and groundwater that is used for drinking, recreation, commerce and supporting healthy populations of flora and fauna. Water quality protection and restoration progress continues to be made in Alabama using an integrated suite of voluntary and regulatory strategies to meet state water quality standards and improve beneficial uses of water.

This document is designed to integrate the authorities, expertise and resources of all nonpoint source stakeholders. It provides foundational and sound courses of actions to assure that all stakeholders are focused on shared goals. Programmatic goals and objectives are intended to be fair, efficient, and receptive to citizen priorities and promote prompt responses to water quality problems as they occur and as resources allow. Nonpoint source management strategies and action items are designed to be flexible, targeted, iterative and supportive of holistic watershed-based management approaches.

The efficient and effective mitigation of nonpoint source pollution in Alabama requires the substantial investment of financial and technical resources. No single federal, state, and local entity can adequately address all nonpoint source issues, especially on a watershed management basis, by working in isolation. Cooperative partnerships are essential to ensuring long-term water quality protection and restoration success. Identifying adequate and stabilized sources of funding is critical to ensuring that current programmatic delivery levels are maintained, especially in light of the current budget challenges facing the state.

The Department looks forward to continuing communication, coordination, collaboration, and cooperation with our valued partners. The partnerships that have been established to address nonpoint source pollution in Alabama have already achieved many accomplishments and successes. Together, we can all continue to build upon those successes and work to improve Alabama's environmental resources for today's citizens as well as future generations.

INTRODUCTION

Nonpoint source pollution, water quality protection and restoration, and sustainable economic growth are not ideals that are mutually exclusive. Resources committed to addressing water resources (quality and quantity) must be based upon valid, science-based monitoring and assessment decision-making criteria. Cooperative partnerships are essential and significant human and financial capital, new and enhanced technologies, innovations, public outreach and other resources are required. While issues can present large, complex, and expensive challenges; the pace and level of program or project implementation is generally contingent upon federal and state appropriations. It is essential that public and private sector funds be used as efficiently as possible to produce the best environmental results, ensure environmental justice, and secure public trust and acceptance. In an era of diminishing programmatic resources, nonpoint source management planning and implementation processes and activities must efficiently leverage and integrate cooperative partnerships and establish appropriate measures and indicators that ensures program transparency and accountability. Substantial opportunities must be provided for the public and private sectors to provide meaningful input and comments and to be active participates in priority-setting and decision making processes.

The state has made great strides in protecting water quality, but we can't slow down or stop now. With growth and progress come real and potential environmental and human health threats. In addition to restoring impaired waters of the state, pollution prevention and preservation of high quality waters must also remain at the forefront of efforts to enhance the vitality, viability and livability conditions of our great state. An efficient and effective nonpoint source pollution management program is not a luxury - it is a necessity. The Alabama Nonpoint Source Management Program incorporates flexible, targeted, iterative, broad-based strategies to successfully mitigate the causes of NPS pollution, achieve implementation success, and continue to move forward using a cooperative partnership approach. The program is designed as a comprehensive roadmap to protect and restore water quality and natural resources from current and future NPS pollution impacts. It also fulfills applicable nonpoint source pollution components and requirements of the Clean Water Act and the Alabama Water Pollution Control Act. In addition, this document allows ADEM to access Section 319 nonpoint source program grant funds from the EPA to address nonpoint source pollution impacts.

This document was prepared in furtherance of regulations, rules, laws and guidelines pursuant to:

U.S. Environmental Protection Agency (USEPA):

Alabama Department of Environmental Management (ADEM):

Clean Water Act Section 319: CITE 33 USC Sec. 1329. Nonpoint source management programs

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Alabama Nonpoint Source Management Program

Chapter 1: Introduction

The Alabama Nonpoint Source Management Program is designed to develop, sustain, integrate, and strengthen NPS pollution management partnerships. It incorporates formal and informal mechanisms to help Alabama citizens protect and restore water quality. Programmatic approaches presented herein are designed to achieve state water quality standards and sustain beneficial uses of water as expeditiously as practicable. Implementation of this statewide program incorporates a combination of flexible, targeted, and iterative voluntary and regulatory approaches. Sustained public and private sector cooperation, coordination, collaboration, and communication are critical implementation elements.

Planning and implementation activities are not limited to the Clean Water Act Section 319 nonpoint source (NPS) management program. Section 319 grant funding is only one tool that is available to address such a large, complex, and highly variable problem. Implementation effectiveness will depend on the effective use and leveraging of funds, resources, and authorities of a wide variety of public and private sector entities that have a role to play in abating and preventing NPS pollution.

Section 1.1 Vision

All surface waters and groundwaters are protected, restored or improved and provide significant social, economic, environmental, and health benefits and opportunities while ensuring private and public lands are managed in a sustainable manner for all citizens live, work, grow, visit, and invest in Alabama.

The Alabama Nonpoint Source Management Program Vision statement is consistent with:

a) Clean Water Act Section 101(a)(7) National Policy: "*…that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution.*"

c) Alabama Water Pollution Control Act Policy: "*…to conserve the waters of the state and protect, maintain and improve the quality thereof for public water supplies, for the propagation of wildlife, fish and aquatic life and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses, to provide for the prevention, abatement and control of new or existing water pollution; and to cooperate with other agencies of the state, agencies of other states and the federal government in carrying out these objectives."*[Code of Alabama (1975) § 22-22-2 (Acts 1971, No. 1260, p. 2175, §1)]

Section 1.2: Scope

The Alabama NPS Management Program will protect and restore water quality by:

A. Strategically focusing programmatic goals and objectives to expeditiously achieve and sustain state water quality standards in priority waters and watersheds

B. Clearly articulating programmatic goals so that project workplan planning and implementation reflect actions to advance those goals

C. Reflecting a balance between watershed-based planning and implementation that best utilizes resources to deliver measurable nonpoint source pollutant load reductions and water quality improvement results

D. Leveraging and integrating a mix of public and private sector programs to align priorities and make the best use of available resources to control nonpoint sources of pollution

E. Tracking and reporting results to demonstrate progress and ensure accountability

The Alabama NPS Management Program is intended to protect and restore water quality and the natural structure and function of watersheds. Rather than narrowly focusing actions on mitigating a cause of nonpoint source (NPS) pollution in a narrowly-defined sense; a holistic watershed-based management approach is recommended whenever practicable. Programmatic goals, objectives and strategies presented herein are designed to link water quality protection and restoration to overall watershed health. The overall premise is to adaptively focus NPS pollution management decisions and resources (and human health and safety) on the dynamics of the whole watershed.

This program document strongly advocates a flexible, targeted, and iterative watershed-based management approach supported by broadly inclusive public and private sector partnerships. Failure to design and implement a holistic NPS management program can result in: a) not meeting the objectives of the Federal Water Pollution Control Act (1972, as amended) and the Alabama Water Pollution Control Act , b) wasteful expenditures of human and financial resources and capital; c) increased degradation of water quality and natural resources, d) increasing threats to environmental and public health, and e) loss of socio-economic and citizen quality-of-life benefits.

This document will be updated, at a minimum, at 5-year intervals so that programmatic goals and objectives, measures and indicators of progress and success, and annual milestones remain current and relevant for achieving NPS pollutant load reductions, meeting state water quality standards and sustaining beneficial uses.

Section 1.3 Purpose

The AL NPS Management Program is developed to ensure that the citizens of Alabama are protected from significant NPS pollution sources and threats to water quality and human health. It establishes a consistent, strategic statewide framework to achieve holistic outcome-based program results rather than focusing on a specific activity output. To maximize implementation efficiency and effectiveness, this program:

a) Places a strong emphasis on implementing a watershed-based approach to improve water quality
b) Integrates a wide variety of programs and resources
c) Leverages human resources and financial capital
d) Supports networks of community-based actions and cooperative partnerships at the state and watershed level
e) Builds capacity for citizen's to understand, value, and manage complex NPS issues and watershed resources
f) Encourages individual responsibility and connections to place (i.e., where citizens live, learn, visit, and work)
g) Coordinates the design and implementation of water quality protection and restoration projects that employs authorities, assistance, technology, and expertise of multiple relevant NPS programs
h) Incorporates a balanced approach that emphasizes both voluntary approaches and statutory authorities
i) Is designed measure progress and success and allow for adjustments to maximize fiscal accountability

The U.S. Environmental Protection Agency (EPA) issued revised Nonpoint Source Program and Grants Guidelines for States and Territories in 2013 for the award of CWA Section 319 grants. The guidelines were developed to aide states in implementing their NPS management programs in fiscal year 2014 and for future years. The guidelines describe key components of an effective state NPS program; provide direction and progress tracking criteria, and offers recommendations to increase administrative accountability. In addition, the guidelines emphasize the importance of updating the states' NPS program to ensure that Section 319 funds are targeted to highest priority activities. The following programmatic focus areas are primary benchmarks useful in tracking program progress:

- Ensuring that the citizens of Alabama are presented accurate and scientifically-valid data and information
- Supporting efforts to ensure NPS pollution is considered an integral component of state natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade plans and policies and similarly considered in establishing environmental policies, laws, rules, regulations and ordinances
- Facilitation of diverse partnering so that all parts of society (communities, individuals, businesses, and state, and local governments) may have ample opportunities to participate in water quality protection and restoration decision-making processes and the prevention, reduction, or abatement of NPS pollution risks and threats
- Attainment of water quality standards and environmentally-sustainable and economically-productive watersheds

Section 1.4: History

Congress revised the CWA in 1977, 1981, and 1987; each time strengthening its goals and adding new requirements. Much effort and billions of dollars have been expended nationally to restore and protect the biological, physical, and chemical integrity of the nation's waters - by primarily targeting point (end-of-pipe discharge) sources of pollution. In Section 101(a)(7) of the 1987 CWA amendments, Congress mandated, "*it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution*." Also in 1987, Congress added Section 319 to the CWA. Section 319(a) of the CWA requires states to develop a Nonpoint Source Assessment Report to identify waters impaired by nonpoint sources and categories and subcategories of nonpoint source pollution. Section 319(h) required states to develop a state Nonpoint

Source Management Program designed to implement best management practices (BMPs) to address problems identified in the NPS Assessment Report and authorized grant funding to implement a state NPS program. The 1989 and 2000 management program documents provided good foundations to address NPS pollution; however, as Alabama's population continues to grow, societal demands for clean and healthy waters continue to increase and NPS issues and resources have continued to expand in scope and scale.

The Alabama NPS program was approved by EPA in 1989. Implementation of CWA Section 319(h) grant funded projects began in 1990 when the Alabama Department of Environmental Management (ADEM) received its first grant appropriation from EPA Region 4 to implement a variety of NPS control projects. The success of ADEM relative to effectively managing NPS pollution in Alabama is inextricably linked to the efforts of many and varied cooperative partnerships and leveraging of program resources. The ADEM Nonpoint Source Program appreciates the time, interest and expertise of all the agencies, workgroups, and committees who generously provide time, resources, input, suggestions, and comments. Special appreciation and thanks go to citizens who voluntarily strive daily to "make a difference" with inadequate funding and resources.

Section 1.5: Layout and Accessibility

Efforts are made to ensure the usefulness, timeliness, and accuracy of the information contained in this document; however, the scope and scale of NPS pollution makes it impossible for a single document to describe in comprehensive detail and depth all its intertwined complexities. References, information, or data provided by any particular person, program, organization, or other entity identified in this document does not constituent endorsement by ADEM, but is provided to assist the public and private sectors in taking local responsibility for local planning and implementing local solutions for local problems.

This updated document is designed to make program implementation more coherent, publicly accessible, and user-friendly. Specifically, the content of this document:

a) Highlights website links, references, and contacts
b) Condenses data and information into lists, tables, or figures or directs the user to an external reference source
c) Is publically available to enhance broad-scale distribution and accessibly by varied users and audiences
d) Includes planning and implementation targets that are particularly category-based; however, management solutions may involve a mix of programs resources
e) Promotes consensus for achieving mutually shared environmental outcomes by committing and aligning resources to meet those desired outcomes
f) Provides a holistic conceptual framework for visualizing and organizing NPS management decisions. For example, by thinking about the whole ecosystem, decision-makers can better anticipate how all environmental and socio-economic elements in a watershed are linked together and then address them in a watershed-based management plan.

The AL NPS Management Program document is dynamic. It refines and enhances the goals, objectives and strategies presented in the previous management program (Oct 2000); and which will be obsolete upon EPA approval of this document. It is with great hope that this document continues to leverage limited NPS management resources and all water quality stakeholders are, "working off the same page." The time frame for the public to present new information or provide recommendations and comments to redress any component of this document is open-ended. Contact information for providing input and presenting comments is available on the ADEM website.

Chapter 2: Nonpoint Source Pollution Management Authorities

Section 2.1: Overview

The following regulatory and non-regulatory programs and technical and financial assistance resources address NPS pollution through integrated water quality program management processes. The overall strategy is to promote an appropriate balance between water quality planning, assessment, and management programs and projects and voluntary implementation of applicable NPS components of watershed-based management plans. Regulatory mechanisms ensure "back-stop" authorities and mechanisms when the "voluntary" approach does not appear to be effective (as verified by valid science-based water quality monitoring and assessment data and information).

Section 2.2: EPA Nonpoint Source Management Program Statutes

Section 319 of the Clean Water Act was enacted by Congress in 1987. This amendment to the Federal Water Pollution Control Act (1972) established a national program to control nonpoint sources of water pollution. Under Section 319(a), states address NPS pollution by developing NPS assessment reports that identify NPS pollution problems and sources responsible for the water quality impairments. Section 319(b) is the legal basis for establishing a management program to control NPS pollution to waters of the state. Clean Water Act Section 101(a)(7) also declares that, "*it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution*." Since 1990, Congress has annually appropriated NPS Implementation Grants to Alabama under Section 319(h) to implement NPS initiatives including, as appropriate**,** non-regulatory or regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer, implementation of best management practices (BMPs), and meeting state water quality standards. Several laws, regulations, compliance and enforcement, and policy and guidelines are applicable to state NPS management programs and provide EPA with legal authorities to ensure safe and healthy waters.

Section 2.3 ADEM Nonpoint Source Management Program Statutes

State environmental laws, rules, and regulations provide the technical, operational, and legal details necessary to hold NPS stakeholders legally accountable for natural resource perturbations and water quality violations. Alabama is an "authorized" state; meaning EPA allows the state to administer certain state environmental laws and pollutant discharge permitting programs. Provisions for ADEM legal and assistance authorities are provided by Title 22 of the Code of Alabama (1975), and as prescribed in ADEMs media-specific "Division" regulations and laws.

The Alabama Water Pollution Control Act (Title 22, Section 22-22-1 et seq., Code of Alabama 1975) established and empowers ADEM to issue orders, notices of violation, certifications, or permits; and to enforce provisions of the Alabama Environmental Management Act (Title 22, Section 22-22A-1 et seq., Code of Alabama 1975) through civil actions or administrative orders, including orders with penalties. These Acts also authorizes the Environmental Management Commission to hear appeals and to adopt rules and regulations. ADEM citizen complaint, tracking and resolution status is publicly available on the ADEM website.

Section 2.4 Designated Water "Quantity" Lead Agency and Primacy

The Alabama Water Resources Act [(AL. Code Section 9-10B-2 et seq. (Supp. 1998)], created the Office of Water Resources (OWR). The Act provides for development of beneficial use management plans for surface waters and groundwaters of the state. Administrative OWR programs recommend policies and legislation and coordinates with other interest groups and resource agencies to address intra and interstate water *quantity* resources and issues. The OWR resides in the Alabama Department of Economic and Community Affairs (ADECA). The OWR facilitates and conducts technical studies and implements projects and plans. Projects may include but are not limited to study, survey, analyses, of water quantity resources to determine if certain areas should be designated as capacity stress areas. If the OWR determines that conservation and protection measures are needed in certain areas, the WRC will then decide if water use restrictions should be implemented. Capacity stress areas may be applicable to:

- Local, county, regional, and state surface waters
- Groundwater / subsurface source waters
- Groundwater recharge areas
- Basin watersheds and subwatershed waters

Section 2.5 Federal and State Agency NPS Management Primacy, Authorities and Mechanisms Overview

The AL NPS Management Program and the Section 319 grant program brings together a diverse mix of relevant public and private sector partners (**Table 2.5**) who work together to:

- Increase efficiencies in meeting state water quality standards and water use benefits
- Prioritize and align NPS management processes, emphasizing a watershed-based management approach where sensible, practical and as resources allow to restore and protect water quality from nonpoint sources
- Resolve difficult and complex issues through a mix of voluntary and regulatory approaches as appropriate

- Integrate resources and expertise to expeditiously meet NPS programmatic goals, objectives and milestones
- Achieve priority Section 319 (e.g. N, P, and sediment) and nonpoint source TMDL pollutants of concern load reductions

Table 2.5 Federal and State Agency NPS Management Primacy, Authorities and Mechanisms

NPS Management Program Issue	Contacts, Roles and Responsibilities	Comments
Littering	ADEM (Illegal Dumps) and Criminal Littering	Criminal Littering is a Class C Misdemeanor and is enforced by a network of state and local authorities.
Landfills /Solid Waste / Illegal Dumps	ADEM: (Waste / Remediation) ADEM (Hazardous waste, solid waste, scrap tire, medical waste; landfill construction/demolition waste) ADPH (The Solid Waste Branch provides solid waste technical assistance and certification programs. City of Huntsville - Solid Waste Disposal Authority	ADEM regulates both Solid Waste and Hazardous Waste Disposal Scrap Tires are coordinated through the ADEM Solid Waste Branch.
Land Application: (Domestic septage / sewage sludge / grease)	ADPH EPA ADEM	Illegal Dumps are regulated by the ADEM Solid Waste Branch
On-Site Disposal Systems (septic systems)	ADPH Rules and Septage Management Alabama Onsite Wastewater Board ADEM (Underground Injection)	ADEM regulates decentralized facilities with a design capacity greater than 15,000 gallons per day. ADPH oversees tanks <15,000gpd, including septic tanks. The AL Onsite Wastewater Board licenses installers and pumpers.
Water Quantity, Withdrawals, and Resources	ADECA - Office of Water Resources (OWR)	ADECA addresses any concerns regarding potential water quantity or redirected flow issue. ADEM administers water *quality* programs, not water *quantity* issues
Surface and Underground Mining Abandoned Mine Lands /Reclamation	Office of Surface Mining ADAI - Mining and Reclamation Division Alabama Surface Mining Commission ADEM (stormwater discharge permits)	
Animal Feeding Operations (AFOs) and Concentrated Animal Feeding Operations (CAFOs)	EPA ADEM USDA-NRCS ADAI ACES ADPH	EPA/ADEM - issues and enforces NPDES permits NRCS - technical guidance for developing Comprehensive and Nutrient Waste Management Plans ACES - research, education and outreach ADAI - dead poultry disposal /other zoonosis ADPH - vector control and dead animal disposal
Fish Consumption Guidelines, Warnings and Advisories	ADPH ADEM	Interprets data collected by ADEM and issues warnings and advisories. ADEM collects and analyses fish tissue samples
Smoke / Burning	AFC ADEM (air pollution permits)	AFC oversees "prescribed" or controlled burning
Clear Cutting / Timber Harvesting	AFC ADEM (stormwater discharge permits) ADCNR (state lands) USFS (Federal lands) USACOE (Wetland silvicultural practices)	

Pesticides	EPA Food and Drug Administration U.S. Department of Agriculture ADAI ADEM ACES Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) National Pesticide Information Center EPA Human Health Benchmarks for Pesticides	EPA assures pesticides and its uses do not endanger human and environmental health FDA has a cooperative agreement with EPA with regard to FIFRA (food safety and application to the human body) USDA provides a wide range of human health, environmental and economic pest management programs ADAI regulates individuals or companies that sell, use, or supervise the use of restricted use pesticides; engage in the commercial application of structural or horticultural pest control activities; and investigates complaints and enforces pesticide laws in conjunction with EPA (e.g. registration; labeling; disposal, use/misapplication, etc.) and ADEM (e.g., water pollution complaints; spills and incidents, fish kills). ADEM regulates the application of biological and chemical pesticide applications that leave a residue in water when such applications are made in, over, or near waters of the U.S. ACES provides research circulars, bulletins, reports, and education and outreach
(Recreation) Beaches Boating / Marina Septage Pump-out Motorized Vehicles in Streams	ADCNR ADEM (Clean Vessel Act) ADPH (beach monitoring) and Coastal Conditions (air, water, fish/shellfish issues) Alabama-Mississippi Clean Marina Program EPA (vessel discharges)	ADCNR inspects vessels for compliance with the Clean Vessel Act. ADEM provides grant funding to marinas for the installation of septage pump-out equipment and holding tanks. ADPH regulates holding tanks and septic systems used to manage marina waste The Clean Marina Initiative is a voluntary, incentive-based program promoted by NOAA and others that encourages marina operators and recreational boaters to use environmentally sound operating and maintenance techniques to protect coastal water quality ADCNR prohibits the use of ATVs in state waters EPA's vessels program regulates incidental discharges from the normal operation of vessels. This NPDES vessels program does not regulate discharges from military vessels or recreational vessels.
Dam Construction, Safety, and Inspection	NRCS ADECA	A Memorandum of Understanding was signed by ADECA and NRCS to inspect all watershed dams every 5 years. A comprehensive dam inspection program currently does not exist; however, efforts are in progress under the direction of ADECA - OWR.
Dredge and Fill	EPA ADEM U.S. Army Corps of Engineers U.S. Fish and Wildlife Service	Corps of Engineers - Administers individual and general permits; conducts/verifies jurisdictional determinations; develops policy and guidance; enforces provisions of Section 404. EPA – Develops/interprets policy, guidance and environmental criteria for permit applications; determines scope of geographic jurisdiction and applicable exemptions; reviews/comments on individual permit applications; prohibits, denies, or restricts the use of defined areas as a disposal site (Section 404(c)); May elevate specific cases (Section 404(q); enforces Section 404 provisions. U.S. Fish and Wildlife - Evaluates impacts on fish and wildlife of all new Federal and Federally permitted projects, including projects subject to Section 404 (pursuant to the Fish and Wildlife Coordination Act); elevates specific cases or policy issues pursuant to Section 404(q).
Endangered and Threatened Aquatic	U.S. Fish and Wildlife Service Laws and Lists	USFWS implements the Endangered Species Act (1973, as amended).

Species	EPA (Programs)	EPA assures uses of pesticides do not endanger species
Wetlands	USACOE (regulations; BMPs) EPA (Delineation) ADEM program and coastal zone ADCNR - Lands Division (Protection) USDA-NRCS (Wetland Reserve Program) AFC (Silvicultural BMPs) USFWS (Characterization, maps, trends) Mobile Bay - National Estuary Program	USACE determines whether an area is a wetland and issues dredge and fill permits. USACE administers permitting and enforcement for work or structures; in, over or under navigable waters of the U.S under Section 10 of the Rivers and Harbors Act (1899). EPA administers the wetland use permit application process with USACE under CWA Section 404. State Water Quality certification review is a shared USACE and ADEM process under CWA Section 401. NEP provides coastal/estuary planning and management
Noise	EPA FHA - Traffic noise level criteria State Fire Marshall and the ADAI Noise Pollution Clearinghouse	Local community noise is not regulated by EPA or ADEM Function of local city/county governing authorities Safe handling, transportation of explosives, and timing of blasting operations at a quarry is addressed by the State Fire Marshall and ADAI.
Mercury: • Atmospheric deposition • Fish Consumption Advisories	EPA (general) and effects EPA Fish Consumption Advisories ADPH - Fish Consumption Advisories ADEM (Fish tissue monitoring)	The USEPA issues mercury standards and regulations in regards to health effects and reduction actions ADPH issues, modifies and removes state fish consumption warnings and advisories for mercury The ADEM, TVA, and ADCNR collects and analyses fish tissue samples, but do not issue consumption advisories or warnings.
Home Rule		Most counties and municipalities do not possess regulatory authorities. Alabama is the only state in the southeast in which counties and local governments must first seek legislative approval for typically mundane activities.
Project location and site selection choices	Local county or municipal government (zoning)	ADEM has no legal authority regarding this. Determining how land is used is a function of local county or municipal government zoning.
Water withdrawal from mining operations Water quantity or redirected flows	ADECA - OWR	Surface and groundwater levels causing sinkholes or depletes sources of water for livestock. The OWR also has statutory authority regarding water quantity or redirected flows.

Chapter 3: Water Resources

Section 3.1: Overview

With over 77,000 miles of perennial and intermittent streams and rivers; 481,757 acres of publicly-owned lakes and reservoirs, 610 square miles of estuaries, and 50 miles of coastal shoreline, the state is faced tremendous challenges to protect, restore and maintain healthy water quality. Water quality protection and restoration success efforts in Alabama have contributed to:

- Waters classified as either Agricultural and Industrial Water Supply or Limited Warmwater Fishery waters reduced by more than 80%, from 713 miles to 141 miles
- Waters classified as Outstanding Alabama Waters now accounting for approximately 285 miles of rivers and streams and 3,582 acres of coastal waters
- Waters classified as Outstanding National Resource Waters now accounting for approximately 805 miles of rivers and streams
- A Special Treasured Alabama Lake designation was created in April 2011 with Lake Martin becoming the first waterbody in Alabama to receive this high quality water designation

Section 3.2 Water Resources - Assessing Water Quality Characteristics and Conditions

The ADEM continues to collect water quality resource data and information to:

- Develop, revise, and adopt state water quality standards
- Develop criteria, measures and indicators
- Estimate long-term trends
- Evaluate programmatic and project-level management measure and practice implementation effectiveness
- Categorize Alabama waters for input in the biennial Section 305(b) Integrated Assessment Report
- Support NPS voluntary and regulatory watershed / water quality restoration and protection decision-making
- Provide estimates of water quality of rivers, reservoirs, lakes, streams, wetlands, estuaries, aquatic habitat and other natural resources relative to environmental protection and socio-economic / quality-of-life considerations

A combination of fixed, targeted and probabilistic monitoring sites and projects are coordinated to meet AL NPS Management Program, Section 319 grant project workplan, and other ADEM priority or program goals and objectives. Water resources in Alabama are generally evaluated using four types of monitoring data and information:

- *Probabilistic* sites are located at the downstream-most points of randomly-selected watersheds that reflect both overall water quality conditions within a basin group, as well as the complete gradient of potential human disturbances. They are sampled in accordance with ADEM's annual statewide monitoring plan strategies.
- *Targeted* sites are selected by ADEMs Water Quality Branch, ADEM Field Operations Environmental Indicators Section, ADEM NPS Management /Section 319 Grant program, and the Alabama Clean Water Partnership to provide data for use support and assessment, TMDL development, Use Attainability Analyses, and watershed-based plan planning and implementation /BMP effectiveness. Where practicable and allowable, targeted sampling is conducted in accordance with ADEMs annual statewide monitoring plan strategies. *Ecoregional reference reaches* are established to reflect the best attainable conditions present within a specific ecoregion, are sampled to provide baseline data for comparison to other streams within the ecoregion.
- *Ambient trend* sites are sampled to identify long-term trends in water quality statewide and to provide data for the development of TMDLs and water quality criteria. Sampling frequency and parameters collected at these sites vary from other station types.

A summary of water resources in Alabama is presented in **Table 3.2.A**. Major River Basins are presented in **Figure 3.2.** The ADEMs water quality monitoring groupings of major river basins are presented in **Table 3.2.B**.

Table 3.2.A Water Resources in Alabama

Category	Value
State population	4,447,100
State surface area	51,609
Number of river basins	14
Total miles of rivers and streams	77,274
Miles of perennial rivers/streams	47,072
Miles of intermittent (nonperennial) streams	30,170
Miles of ditches and canals	32
Border miles of shared rivers/streams	210
Number of lakes/reservoirs/ponds	7,694
Number of significant publicly-owned lakes/reservoirs/ponds	43
Acres of lakes/reservoirs/ponds	490,472
Acres of significant publicly-owned lakes/reservoirs/ponds	425,748
Square miles of estuaries/harbors/ponds	610
Miles of ocean coast (includes bays and inlets)	337
Acres of freshwater wetlands	3,600,000

Figure 3.2 Major Alabama River Basins (8- Digit HUCs)

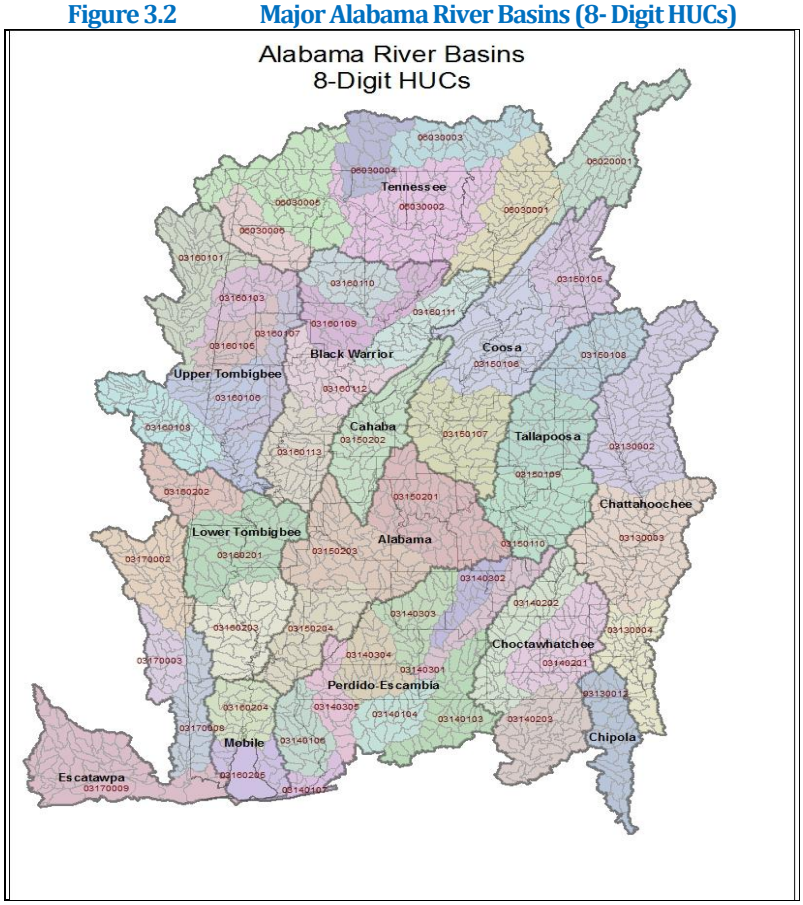


Table 3.2.B ADEM River Basin Monitoring and Assessment Strategy Groupings

River Basin
Tennessee
S.E. Alabama (SEAL: Chattahoochee / Chipola / Choctawhatchee / Perdido-Escambia)
Alabama / Coosa / Tallapoosa
Escatawpa / Mobile / Tombigbee
Black Warrior / Cahaba

Section 3.3 Wetlands Resources

Freshwater wetlands in Alabama occupy an estimated 3,600,000 acres. Alabama's coastal wetlands are estimated at 27,600 acres (National Wetland Inventory). Coastal areas of Alabama also contain an estimated 610 square miles of estuaries and a 337 mile long coastal shoreline (includes Mobile Bay and island shorelines). Alabama has initiated a Wetlands Identification Program in Baldwin County and has completed an extensive study of possible wetland restoration project locations for 5 other areas of the State (e.g. Alabama River Watershed, Lower Black Warrior River Watershed, Sipsey River Watershed, and Baldwin and Mobile Counties).

Alabama's Mobile-Tensaw River Delta is one of the best preserved major river deltas in the nation. The Alabama Department of Natural Resources and Conservation - State Lands Division purchased large tracts of the Delta through the Department of Interior's North American Wetlands Conservation Act (NAWCA) and state funding. The 6th largest watershed area in the United States drains into this deltaic and estuarine complex. Wetlands have also been purchased at the Weeks Bay National Estuarine Reserve.

Alabama's two coastal counties (Baldwin and Mobile) contain approximately 271,000 acres of wetlands and about 400,000 acres of streams and estuarine waters; representing about 12.5% and 18% respectively, of the total

geographic management area of the Alabama Coastal Nonpoint Pollution Control Program (ACNPCP). The ACNPCP recognizes the function of coastal wetlands and the important role coastal areas, wetlands, riparian and shoreline vegetative buffers serve in mitigating NPS pollution impacts. Alabama manages wetlands and riparian as important resources that improve water quality and provide habitat. Alabama's awareness of these resources has resulted in the development of watershed projects and programs that continue to proactively incorporate CZARA-Section 6217 (g) guidance management measures and program approval criteria within the ACNPCP Management Area. ADEMs Mobile Branch and Coastal staff continues to participate in the development and approval of coastal wetland mitigation banks throughout the ACNPCP service area (approx. 1,900 wetland acres).

The ACNPCP, U.S. Fish and Wildlife Service, ADCNR, Mississippi Department of Marine Resources partnered with the U.S. Army Corps of Engineer - Mitigation Bank Interagency Review Team (MBIRT) to develop regionalized wetland functional assessment Hydrogeomorphic (HGM) Approach tools to help standardize wetland function assessments in Alabama's coastal zone. The ACNPCP continues to participate in wetland-related technologies in the form of technical studies, workshops, and conferences. In addition, the ACNPCP facilitates coastal *Wetland Rapid Assessment Procedure (WRAP) Workshops, coastal Wetland Plant Identification Workshops,* and regional *Alabama Stream and Wetlands Restoration Conferences*, in addition to an in-depth *Coastal Alabama Hydromodification and Wetlands Technical Update*. Funding may be provided by a CWA Section 319 grant and/or other federal, state and private resources. Wetlands education and outreach is designed to support the Coastal Nonpoint Control Program / CZARA 6217 and enhance knowledge and awareness of various agencies, industry, municipalities, consultants, organizations, groups and individuals.

Additional area wide surveys of coastal wetland acreages, including submerged aquatics, tidal emergence, and swamp forest, are needed throughout the coastal zone. It is assumed that wetland losses that do occur are minimal for regulated wetlands due to restrictive federal and state permit approval processes and mitigation requirements; and, losses that may occur are due to natural erosion, unpermitted land development activities, and unavoidable impairment relative to CWA Section 404 permitted dredge and fill projects. The ADEM, U.S. Army Corps of Engineers, and USEPA continue to partner together to ensure proper wetlands management and mitigation of wetland impacts through CWA Section 404 and CWA Section 401 state water quality certification processes. In addition, the ADEM Coastal/Facility Unit continues to work with governmental entities to provide wetland and submerged aquatic vegetation status and to evaluate long-term trends. Color infrared digital ortho-quarter quads for Mobile and Baldwin Counties have been produced to map wetlands and uplands.

Section 3.4 Groundwater and Drinking Water Resources

In order to improve coordination, cooperation, collaboration, and communication between the statewide and Coastal Nonpoint Source programs, CWA Section 319(h) grant program, and the Groundwater and Drinking Water programs, the AL NPS Management Program incorporates ground water / aquifer (**Figure 3.4**) protection strategies of the comprehensive state ground water protection program and source water protection program. In lieu of awarding separate grants under CWA Section 319(i), applicable NPS pollution mitigation groundwater activities may be funded under CWA Section 319(h).

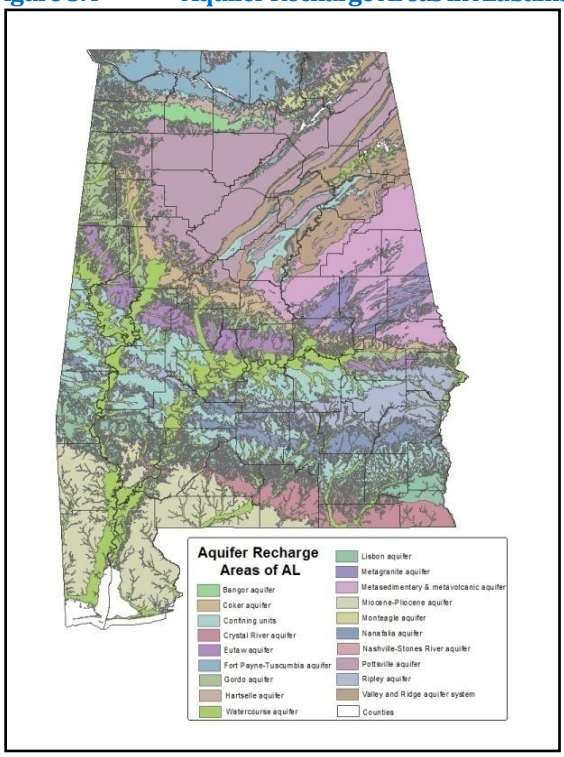
Approximately four million citizens in Alabama utilize approximately 850 M gallons of groundwater and surface water resources each day:

- Approximately 65% of is obtained from surface sources such as reservoirs, lakes, and rivers
- Approximately 35% of the water is obtained from groundwater sources such as wells and springs
- 530 community systems, 61 transient noncommunity systems, and 23 non-transient non-community systems are permitted by ADEM to provide water to the public
- All public drinking water supply systems in Alabama have completed a Source Water Assessment Program (SWAP) for each of their existing groundwater sources. The SWAP report for a groundwater source provides the following drinking water quality contaminant impact information:

✓ Delineation of the source water assessment area (SWAA)
✓ An inventory of the possible contaminant sources within the SWAA
✓ A susceptibility analysis of each possible contaminant source in the inventory
✓ A public awareness requirement

Water systems in Alabama routinely maintain a high (94%) drinking water standards compliance rate. ADEM provides an annual compliance report that lists all water system violations. Water systems are required to provide an annual Consumer Confidence Report to its customers no later than July 1 each year. This report provides information on contaminants that have been detected in the drinking water, status of source water assessments, source of drinking water and treatment processes, and general information regarding board meeting dates and locations. The ADEM continues to insure that delineated source water area maps and potential contaminant site location information are updated and available to the public and private sectors. Source Water Area maps have been digitized for use in developing a GIS layer.

Figure 3.4 Aquifer Recharge Areas in Alabama



Section 3.5 Coastal Zone Resource Management

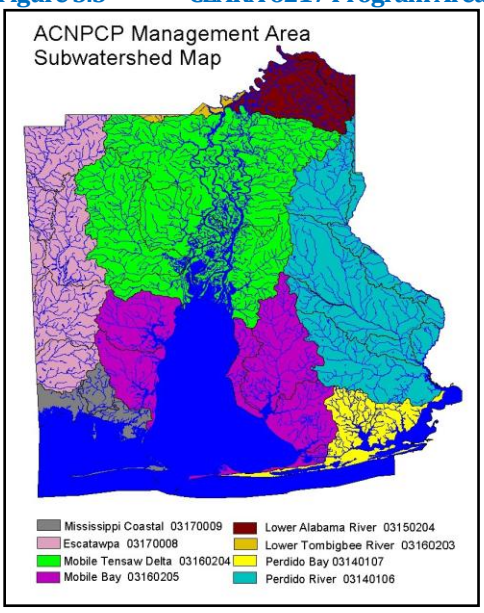
EPA encourages states with coastal nonpoint pollution control programs under Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 ("CZARA") to use Section 319 grant "set-aside" funds to implement coastal nonpoint control program measures and practices. The ADEM Section 319 program staff continues to work closely with ADEM Coastal Programs staff, and in particular, the Alabama Coastal Area Management Program (ACAMP) by coordinating planning and implementation of NPS programmatic water quality protection and restoration activities in the coastal area. The ACAMP is a jointly administered by the Alabama Department of Conservation and Natural Resources-State Lands Division and ADEM Coastal Programs. This partnership is designed to comprehensively and cooperatively protect and restore coastal area lands and waters by preserving, enhancing, and developing coastal resources on coastal lands and waters seaward of the continuous 10-foot contour in Baldwin and Mobile Counties of Alabama (**Figure 3.5**).

The ADEM Coastal Program administers permitting, monitoring, and enforcement activities when they are to occur within the coastal area (e.g. beach and dune construction projects, developments and subdivision of properties greater than five (5) acres in size, dredging and filling of state water bottoms and wetlands, the drilling and operation of groundwater wells with a capacity of 50 gpm or greater, the siting of energy facilities, and other various activities which may have an impact on coastal resources). A major ADEM focus pertains to determining federal consistency (often referred to as coastal consistency) for projects and activities which require federal permits and state water

quality certifications. Construction and development permits may also be required from local coastal area municipalities (e.g. City of Orange Beach, Town of Dauphin Island, Baldwin County Coastal Program Office.)

Alabama has approximately 50 miles of Gulf beaches and almost 70 miles of bay beaches. These areas are major local economic drivers and represent a significant lifestyle component for coastal residents and tourists / visitors. The ADEM, in cooperation with the Alabama Department of Public Health developed a Coastal Alabama Beach Monitoring Program to routinely monitor bacteria levels along coastal Alabama swimming beaches on the Gulf Coast in support of the federal Beaches Environmental Assessment and Coastal Health (BEACH) Act. The goal is to increase public awareness and provide valuable water quality information to help regulatory agencies and the public make more informed decisions concerning coastal marine resources and recreational uses.

Figure 3.5 CZARA 6217 Program Area



The Gulf of Mexico Alliance was established in 2006 to enhance the ecological and economic health of the Gulf of Mexico. This is a regional cooperative effort involving the states of Alabama, Florida, Louisiana, Mississippi, and Texas, with collaboration provided by six Mexican Gulf States. The Alliance promotes responsible management of coastal natural resources and is working to become a model for regional and international planning and partnering.

The EPA Gulf of Mexico Program was founded in 1998 as a consortium of organizations working together to restore, protect, and maintain the Gulf of Mexico ecosystem in ways consistent with the economic well-being of the region. In addition to the five Gulf Coast states, members include: the Gulf of Mexico Business Coalition, the American Farm Bureau, the Gulf Restoration Network, the Conference of Southern County Association, the Gulf States Marine Fisheries Commission, the Gulf State Association of Conservation Districts, the Gulf of Mexico Citizens Advisory Committee and several Federal Agencies including EPA, DOD, DOI, DOC, FDA, DOT and DOA. The program is a non-regulatory effort whose aims include fostering good stewardship of Gulf resources and providing coordination support for local and regional coastal zone management efforts.

The Mobile Bay - National Estuary Program is a federal non-regulatory coastal stewardship program. The NEP program was created through amendments to the Clean Water Act (1987) to identify, restore, and protect nationally significant estuaries. A Comprehensive Conservation Management Plan (CCMP) for the Mobile Bay NEP was developed in July 2012, and is designed as a blueprint for protecting and restoring coastal water quality, estuarine resources and associated watersheds. The Mobile Bay NEP prepares an annual Workplan that describes activities that will be undertaken to implement the CCMP.

Priority subwatersheds for protection and restoration in the coastal area of Alabama are presented in **Table 3.5.A**, below. These watersheds are priority Section 319 grant-funded project areas, but are also recommended by the AL NPS Management Program for targeting and leveraging of other available NPS mitigation resources.

Table 3.5.A ADEM Priority Subwatersheds for Coastal Alabama

Alabama Coastal Nonpoint Pollution Control Program - Alabama Coastal Monitoring Program
(Coastal NPS Program, Water Division, Field Operations, and Section 319/NPS Management Program)

Mobile County	8-HUC	12-HUC
Juniper Creek-Big Creek	3170008	31700080-501
Hamilton Creek-Big Creek	3170008	31700080-502
Pierce Creek-Big Creek	3170008	31700080-601
Collins Creek-Big Creek	3170008	31700080-603
Miller Creek	3170008	31700080-602
Jackson Creek	3170008	31700080-701
Franklin Creek	3170008	31700080-702
Bayou La Batre River	3170009	31700090-102
Fowl River	3160205	31602050-104
Halls Mill Creek	3160205	31602050-102
Upper Dog River	3160205	31602050-101
Three Mile Creek	3160204	31602040-504
Eight Mile Creek	3160204	31602040-304
Bayou Sara	3160204	31602040-402
Seabury Creek	3160204	31602040-303

Baldwin County	8-HUC	12-HUC
WhiteHouse Creek	3160204	31602040-502
Upper Bay Minette Creek	3160204	31602040-501
Lower Bay Minette Creek	3160204	31602040-503
Headwaters Styx River	3140106	31401060-501
Upper Styx River	3140106	31401060-502
Upper Fish River	3160205	31602050-304
Tensaw-Apalachee River	3160204	31602040-505
Yancey Branch	3160205	31602050-301
Fly Creek	3160205	31602050-302
Middle Fish River	3160205	31602050-306
Lower Fish River	3160205	31602050-307
Middle Styx River	3140106	31401060-504
Lower Styx River	3140106	31401060-506
Upper Blackwater River	3140106	31401060-601
Lower Blackwater River	3140106	31401060-603
Bon Secour River	3160205	31602050-310
Oyster Bay	3160205	31602050-208
Skunk Bayou	3160205	31602050-207
Sandy Creek	3140107	31401070-201
Graham Bayou	3140107	31401070-203
Miflin Creek	3140107	31401070-202
Hammock Creek	3140107	31401070204
Palmetto Creek	3140107	31401070-104

The ADEM enforces Division 8 Coastal Area Management Program (Division 335-8) rules for projects having the potential to impact Alabama's coastal resources. The City of Gulf Shores and the City of Orange Beach are delegated to implement the permitting, monitoring and enforcement section of the ADEM Division 8 Coastal Program rules related to construction on Gulf-fronting beaches and dunes. Projects which include potential impacts to waterbottoms or the dredging and/or filling of wetlands will require permits and/or certifications from ADEM, the U.S. Army Corps of Engineers (USACE), and in some instances, the State Oil and Gas Board or the ALDCNR-State Lands Division. Regulated projects that may also contribute to NPS pollution problems include:

- Construction on Gulf-fronting properties
- Commercial and Residential Development on Properties Greater than 5 Acres
- Projects Impacting Wetlands and/or Water Bottoms
- Construction of new, or expansion of existing marinas
- Installation of Groundwater Wells with a Capacity Greater than 50 gallons per minute (GPM)
- Siting, Construction and Operation of Energy Facilities
- Shoreline Stabilization Projects
- Discharges to Coastal Waters

Section 3.6 High Quality and Unimpaired Water Resources

The Alabama's Surface Water Quality Monitoring Strategy and Continuing Planning Process documents are used by ADEM to characterize unimpaired and high quality waters in Alabama. At regular intervals, ADEM updates the identification of these waters in applicable reports and lists such as CWA Sections 305(b), 303(d) , 314(a), 319(a), and 320. Unimpaired waters (i.e., waters attaining all applicable state water quality standards) are identified in the Section 305(b) Integrated Report as Category 1 waters. This Category includes Outstanding National Resource Waters, Treasured Alabama Lakes and Outstanding Alabama Waters, as presented in **Table 3.6**, below:

Table 3.6 Outstanding National Resource Waters, Outstanding Alabama Waters, and Treasured Alabama Lakes

A: Waterbody Segments Designated Outstanding National Resource Waters

River Basin	Segment	Downstream	Upstream	Classification
Black Warrior	Sipsey Fork and tributaries	Sandy Creek	Its source	S/F&W
Coosa	Little River and tributaries	Coosa River (Weiss Lake)	Junction of East Fork of Little River and West Fork of Little River	PWS/S/F&W
Coosa	East Fork of Little River and tributaries	Little River	Alabama-Georgia state line	PWS/S/F&W
Coosa	West Fork of Little River and tributaries	Little River	Alabama-Georgia state line	PWS/S/F&W
Mobile	Weeks Bay	Bon Secour Bay	Fish River	S/F&W

B: Waterbody Segments Designated as Treasured Alabama Lakes

River Basin	Segment	Downstream	Upstream	Classification
Tallapoosa	Tallapoosa River (Lake Martin)	Martin Dam	Highway 280	S/F&W
Tallapoosa	Tallapoosa River (Lake Martin)	Highway 280	Hillabee Creek	PWS/S/F&W
Tallapoosa	Little Kowaliga Creek (Lake Martin)	Big Kowaliga Creek (Lake Martin)	Reservoir Limits	PWS/S/F&W
Tallapoosa	Manoy Creek (Lake Martin)	Tallapoosa River (Lake Martin)	Reservoir Limits	PWS/S/F&W

C: Waterbody Segments Classified as Outstanding Alabama Water

Stream	From	To	Classification
Cahaba River	Alabama River	Junction of lower Little Cahaba River	OAW/S
Cahaba River	Junction of lower Little Cahaba River	Shelby County Road 52	OAW/F&W
Cahaba River	Dam near U.S. Highway 280	Grant's Mill Road	OAW/PWS
Cahaba River	U.S. Highway 11	Its source	OAW/F&W
Little Cahaba River (Bibb County)	Cahaba River	Its source (junction of Mahan Creek and Shoal Creek)	OAW/F&W
Hatchet Creek	Coosa River (Lake Mitchell)	Norfolk Southern Railway	OAW/S/F&W
Hatchet Creek	Norfolk Southern Railway	Junction of East Fork Hatchet Creek and West Fork Hatchet Creek	OAW/PWS/S/F&W
East Fork Hatchet Creek	Hatchet Creek	Its source	OAW/F&W
West Fork Hatchet Creek	Hatchet Creek	Its source	OAW/F&W
Tensaw River	Junction of Tensaw and Apalachee Rivers	Junction of Briar Lake	OAW/S/F&W
Tensaw River	Junction of Briar Lake	Junction of Tensaw Lake	OAW/F&W
Briar Lake	Junction of Tensaw River	Junction of Tensaw Lake	OAW/F&W
Tensaw Lake	Junction of Tensaw River	Bryant Landing	OAW/F&W
Wolf Bay and all connecting coves and bayous	Intracoastal Waterway	Moccasin Bayou	OAW/SH/S/F&W
Magnolia River	Weeks Bay	Its source	OAW/S/F&W
Tallapoosa River	Cane Creek	AL-GA state line	OAW/F&W

In an effort to increase resources to protect unimpaired and high quality waters, ADEM will consult with EPA R-4 for permission to allow a limited amount of Section 319 watershed project funds to protect unimpaired/high quality waters identified in the Section 305(b) Water Quality Inventory Report to Congress (i.e., see ADEM Integrated

Reports), particularly waters listed as, Waterbody Segments with Special Designations and Waterbody Segments Classified as Outstanding Alabama Waters. A mix of regulatory, nonregulatory, financial and technical assistance education, training, technology transfer, demonstration projects and measures and practices may be used to target one or all of the following unimpaired and high quality water protection priorities:

- Watershed or water quality-based approaches aimed at maintaining water quality standards directly
- Iterative, technology-based approaches based on best management practices and measures, applied on either a NPS major categorical, watershed-based, or project site-specific basis; or,
- An appropriate mix of these approaches

Chapter 4: Nonpoint Source Program Water Quality Monitoring and Assessment

Section 4.1 Overview

A goal of the Alabama NPS Management Program and the CWA Section 319 grant program is to manage nonpoint source pollution to achieve and maintain beneficial uses of water. In Alabama, designated surface water uses and criteria intended to protect water quality and beneficial uses are prescribed by ADEM regulations (Administrative Code r. 335-6-x-.xx. Volume 1, Division 335-6: 335-6-11 and 335-6-10. Rev. March 26, 2013). Water quality monitoring and assessment data collection and analyses efforts are integral components of the AL NPS Management Program. Valid, science-driven data continues to be collected by ADEM to help the public and private sectors formulate NPS water quality protection and restoration decisions and to evaluate whether:

a) Clean Water Act goals and objectives are being achieved (in terms of on-the-ground actions and actual water quality improvements)
b) Water quality standards, use classification and other benefits are being met (includes baseline and trend data)
c) Implementation of structural measures and non-structural managerial practices effectively protect and restore waters of the state and enhance beneficial uses
d) Section 319 grant guidelines, TMDL pollutants of concern, and other priority NPS pollution load reductions are being achieved
e) Watershed-based plans and other NPS management activities are effective and relevant, or need to be modified to meet AL NPS Management Program water quality protection and restoration goals and objectives

Water quality data collected by ADEM continues to indicate that NPS pollution is a dominating factor contributing to water quality impairments in Alabama; however, given limited resources, ADEM cannot realistically be expected to comprehensively monitor and assess all waterbodies in the state. A supporting network of governmental agencies, the academic community, regulated private and public sectors, and citizen groups and volunteers continue to cooperatively leverage resources to help strike an appropriate balance between planning, assessment, management, and implementation of statewide and community-based programs and projects. The following information, expectations, and context for prioritizing and selecting AL NPS Management Program and Section 319 grant-funded water quality monitoring initiatives includes:

- Watersheds or portions of watersheds with unique, valuable, or threatened species or critical aquatic habitats of these species
- Waters and watershed areas (including ground waters where appropriate) that serve as source water for a public drinking water supply
- Protection of high quality waters in watersheds that contain some impairment
- Waters near geographic areas where rapid land use development is occurring
- Waters where data trends indicate water quality degradation is occurring
- Restored waters requiring continued assessment and maintenance of NPS measures to ensure unimpaired status
- Water categorized as high quality
- Watersheds contributing high nutrient loads to downstream / receiving waters
- Enhancing watershed protection and restoration planning, initiatives, guidelines, frameworks, and metrics

Watershed-based management plans as expressed in Section 319 grant guidelines provide an effective roadmap to achieve watershed health and water quality restoration goals. Watershed-based plans should include a water quality monitoring component to help the public determine whether incremental progress is being made toward attaining or maintaining applicable state water quality standards for the waterbody that is being addressed. The AL NPS Management Program recommends that all NPS watershed-based management plans incorporate water quality

benchmarks that indicate, and help the public evaluate, implementation effectiveness (e.g. whether NPS loading reductions are being achieved over time). Water quality data should reflect the time it takes to implement pollution control measures, as well as the time needed for water quality indicators to respond, including lag times (e.g., water quality response as it is influenced by ground water sources that move slowly or the extra time it takes for sediment bound pollutants to break down, degrade or otherwise be isolated from the water column). A well-designed water quality monitoring component can also indicate whether the management plan needs to be revised if interim pollution loading targets are not met relative to management measure failures, the time it takes for pollution concentrations to respond to treatment, natural disasters, and other unforeseen problems and issues. It is recommended that a holistic watershed-based monitoring approach be undertaken to measure the impacts of multiple watershed-based programs and projects and to assess improvement trends and success over time. To reduce human and financial capital needs, monitoring generally does not have to be conducted for an individual management measure unless that type of monitoring is particularly relevant to project intent and design.

4.1. A State of Alabama Continuing Planning Process

Section 303(e) of the federal Clean Water Act (CWA) and regulations at 40 CFR Section 130.5 requires the state to establish and maintain a continuing planning process (CPP) to manage its water quality program consistent with Section 303(e)(3)(A) - (H) of the Act. The Alabama Department of Environmental Management has state primacy to implement provisions of the Alabama Water Pollution Control Act, including development of the State of Alabama Continuing Planning Process (CCP). The EPA periodically reviews the adequacy of the CCP to ensure that Alabama water quality program activities and procedures are consistent with applicable provisions of the Clean Water Act. The following ADEM water quality programs that maintain and integrate the CCP include but are not limited to:

- Stream, lake, coastal and other water quality monitoring and assessment
- CWA Sections 305(b), 303(d) , 314(a), 319(a), and 320 water quality assessment and reporting
- Total Maximum Daily Load (TMDL) development
- Water quality standards development, review, and revision (including confined animal feeding operations)
- Nonpoint Source Management Program / Section 319 grant projects
- Watershed-based plan development and implementation
- State Revolving Fund (SRF)

4.1. B State of Alabama Water Quality Monitoring Strategy

The State of Alabama Water Quality Monitoring Strategy provides for long-term planning, enhancement of future initiatives and timelines, and addresses incremental improvements necessary to satisfy ADEM monitoring goals and requirements pursuant to the Alabama Water Pollution Control Act, the Alabama Environmental Management Act, and the federal Clean Water Act. The objectives of the Monitoring Strategy are consistent with Clean Water Act Section 106 grant funding conditions as well as the state's statutory and regulatory monitoring requirements and data needs. The Strategy applies to wadeable rivers and streams, nonwadeable rivers and reservoirs/lakes, estuaries, coastal waters, wetlands, and groundwater and is used to:

1) Determine attainment of water quality standards
2) Identify impaired waters
3) Identify unimpaired and high-quality waters
4) Identify causes and sources of water quality impairments
5) Support "integrated listing category" decisions
6) Evaluate program needs, priorities, or effectiveness
7) Estimate overall water quality
8) Estimate water quality trends
9) Establish, review, and revise water quality standards

The Strategy addresses ten broad categories: Monitoring, Objectives, Design, Water Quality Indicators, Quality Assurance, Data Management, Data Analysis and Assessment, Reporting, Programmatic Evaluation, and Support Planning. This coordinated approach is used by ADEM to characterize water quality, identify impacts from a variety of sources, and provide a systematic and integrated framework for gathering necessary information to support decision-making processes. It is implemented annually with formal in-depth ADEM staff input provided at least annually. Annual coordination/planning meetings are conducted internally that include staff involved in monitoring, criteria/standards, permitting, and education and outreach. Annual reports provided to EPA Region 4 are used to document ADEM progress towards meeting monitoring goals.

4.1. C Quality Assurance (QA)

ADEM develops an annual Quality Management Plan (QMP) or "blue print" that describes the quality assurance procedures, quality control specifications, and technical activities that will be implemented to ensure that NPS project results achieve the type and quality of environmental data and information needed for a specific decision or use. The QMP is revised by ADEM and approved by EPA Region 4 on a five-year cycle following procedures outlined in SOP# 8303 "*Preparation, Review, Approval Distribution and Archival of the Departmental Quality Management Plan"* (QMP).

One of the primary tools for QA management is Alabama's Quality Assurance Project Plan (QAPP). The QAPP is developed in accordance with ADEM SOP #8302, "*Preparation, Review, Approval, Distribution, and Archival of Quality Assurance Program/Project Plans (QAPPs)* and *EPA Requirements for Quality Assurance Project Plans"* (EPA QA/R-5, 2001). The *Quality Assurance Program Plan (QAPP) for Surface Water Quality Monitoring in Alabama* is certified by EPA Region 4 relative to the CWA Section 106 Workplan or as applicable to a cooperative EPA/ADEM Performance Partnership Grant (PPG). The QAPP describes standard activities and supporting documents to conduct the Department's monitoring program. Routine and certain special studies including program monitoring activities are implemented under this generic program plan. Specific annual study plans involving CWA Section 106, Section 319, and the interagency fish tissue program are submitted by ADEM to EPA as addendums to the QAPP. Special studies involving an immediate public health threat or criminal investigation most often will be carried out under the generic program QAPP due to the limited time frame for response and obtaining samples. In addition to fulfilling federal grant requirements, the QAPPs are intended to serve as an historic record of the activities and assessment methods used to ensure the quality, accuracy, precision, and completeness of the data collected and analyzed for each project and describes the data quality objectives for the final use of the data.

All Section 319 grant funded projects involving the acquisition of environmental data by an ADEM cooperative agreement sub grantee must be conducted using have an EPA-approved QAPP developed in accordance with EPA guidelines. Useful environmental data acquisition guidelines for volunteer monitoring programs are presented in, The Volunteer Monitor's Guide to Quality Assurance Project Plans.

Section 4.2 Water Quality Criteria and Water Quality Standards

Alabama is blessed with a wealth and variety of natural resources that provide significant social, economic, and environmental benefits and opportunities for the citizens of Alabama. The Alabama NPS Management Program collects and provides water quality data to:

- Identify and characterize NPS impaired and unimpaired and high quality waters
- Identify NPS water quality degradation and improvement trends over time
- Identify emerging problems and threats
- Prioritize and direct NPS management program and project-specific efforts to where they are most needed
- Assess the efficacy of programs and projects in mitigating NPS pollution

Alabama's public waters are monitored by a mix of state, federal, and local agency, university, and volunteer NPS program partners. Water quality standards are used to define designated use goals, set water quality criteria to protect those uses, and establish antidegradation policy provisions to protect waterbodies from pollution. Although targeting "point source" pollutant discharges, ADEM's adoption or modification of the numeric and narrative criteria regulation at Section 304(a) of the Clean Water Act provides for sufficient nonpoint source pollutant coverage of adequate stringency to protect designated uses. In addition to narrative and numeric (chemical-specific) criteria, ADEM adopts other types of water quality criteria including biological criteria (e.g., numbers and diversity of aquatic organisms expected to be present in a water body); nutrient criteria (e.g. to protect against nutrient over-enrichment and cultural eutrophication), and sediment descriptions (e.g. conditions that will avoid adverse effects of contaminated and uncontaminated sediments). ADEM monitoring program components are presented in the State of Alabama -Water Quality Monitoring Strategy (2012, and as updated/revised).

Section 4.3 CWA 305(b) Integrated Water Quality Assessment and Monitoring Report (IR)

Alabama's Integrated Water Quality Assessment and Monitoring Reports (IR) combines information about surface and ground water quality, resource management programs, and a comprehensive listing of impaired waters as

required by the Clean Water Act. The condition of all surface waters is categorized according to its designated uses and the degree to which water quality is supporting those uses. Alabama waters are segmented using a high resolution National Hydrography Dataset (NHD) and assigned a unique identification number or "Assessment Unit Identification" (AU-ID). An AU-ID is based on a twelve-digit Watershed Boundary Dataset (WBD). Water quality data and information are evaluated using ADEMs established use-support assessment approach. Waterbodies are then assigned to a particular listing category (Table 4.3, below). This integrated listing methodology is used by the AL NPS Management Program and the Section 319 grant program to help prioritize and target resources to protect designated uses of unimpaired and threatened waters and restore impaired waters of the state.

The Section 319 grant program is the primary funding mechanism used in Alabama to restore impaired waters listed in CWA Section 305 (b) water quality reports, especially where NPS pollution is a contributor to impaired water quality. While NPS pollution continues to dominate as the primary cause of water quality impairments in the state, water quality protection and restoration funding needs far exceed the human and financial capital available to efficiently and expeditiously mitigate the causes of nonpoint source pollution. And, although protection of all waters is an AL NPS Management programmatic priority, CWA Section 319 grant funds will primarily only be used by ADEM to restore designated Category 5 impaired waters (Figure 4.3.1). Focusing resources on the restoration of impaired waters is in harmony with Section 319 grant guidelines (2013). In an effort to increase resources to protect unimpaired/high quality waters, ADEM may consult with EPA to allow a limited amount of Section 319 watershed "restoration" project funds to be used to protect unimpaired/high quality waters identified in the Section 305(b) report.

The ADEM continues to focus Section 319 grant funds to monitor, assess, evaluate and report the causes of NPS pollution on a watershed and project-specific basis. Section 319 grant guidelines place a strong emphasis on implementing a holistic watershed-based approach to restore NPS-impaired waters. The AL NPS Management Program promotes the leveraging of all available federal and state resources, supports networks of community-based actions, and encourages the development and application of regulatory and non-regulatory scenarios that advance water quality monitoring and assessment efforts. For example, the leveraging Section 319 grant resources and Agricultural Act of 2014 (i.e., Farm Bill) conservation programs and incentives (e.g. National Water Quality Initiative) can be expected to yield substantial water quality protection results in the future. As a result, the State is expected to experience positive results in terms of both on-the-ground actions and actual water quality improvements.

Table 4.3 Integrated Listing Methodology (Categories 1 - 5)

Category 1	Waters that are attaining all applicable water quality standards.
Category 2	Waters for which readily available data, which meets the State's requirements supports a determination that some water quality standards are met and there is insufficient data to determine if remaining water quality standards are met. Attainment status of the remaining standards is unknown because data is insufficient. Waters for which the minimum data requirements have not been met are also placed in Category 2.
Category 2A	Available data does not satisfy minimum data requirements but there is a high potential for use impairment based on the limited data. These waters will be given a higher priority for additional data collection
Category 2B	Available data does not satisfy minimum data requirements but there is a low potential for use impairment based on the limited data. These waters will be included in WQ monitoring basin plan strategies as resources allow.
Category 3	Waters for which there is no data or information to determine if any applicable water quality standard is attained or impaired. These waters will be considered unassessed.
Category 4	Waters where one or more applicable water quality standards are not met but establishment of a TMDL is not required.
Category 4A	Waters for which TMDLs result in attainment of applicable WQSs have been approved or established by EPA.
Category 4B	Waters for which other required control measures are expected to attain applicable water quality standards in a reasonable period of time. Adequate documentation is required to indicate that the proposed control mechanisms will address all major pollutant sources and should result in the issuance of more stringent effluent limitations required by either Federal, State, or local authority or the implementation of "other pollution control requirements (e.g., best management practices) required by local, state, or federal authority" that are stringent enough to implement applicable water quality standards. Waters will be evaluated on a case by case basis to determine if the proposed control measures or activities under another program can be expected to address the cause of use impairment within a reasonable time period. A reasonable time period may vary depending on the degree of technical difficulty or extent of the modifications to existing measures needed to achieve water quality standards.
Category 4C	Waters in which the impairment is not caused by a pollutant. This includes waters which are impaired due to natural causes or pollution. A pollutant is defined in Section 502(6) of the Clean Water Act (CWA) as "spoil, solid waste, incinerator residue, sewerage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water." Pollution is defined as "the man-made or man-induced alteration of the chemical, physical, or radiological integrity of a waterbody." Invasive plants and animal species are considered pollution.

Category 5	Waters in which a pollutant has caused or is suspected of causing impairment. If the impairment is caused by an identified pollutant the water should be placed in Category 5. All "readily available data and information" is used to determine when a waterbody should be placed in Category 5. Waters placed in this category comprise the state's list of impaired waters or Section 303(d) list. When the information used to assess the waterbody consist primarily of observed conditions (e.g. limited water quality data, water quality data older than six years, or estimated impacts from observed or suspected activities), the assessment is generally referred to as an evaluated assessment (Category 2). Evaluated assessments usually require the use of some degree of professional judgment by the person making the assessment and these assessments are not considered sufficient to place waters in or to remove waters from impaired list (Category 5) or the fully supporting category (Category 1).

Categories 1 and 5 waters are based on readily available chemical, physical, and/or biological data collected during the previous six years, using commonly accepted and well-documented methods. Readily available data are data that have been collected or assembled by the ADEM or other groups or agencies and are available to the public. Data older than six years old may be used on a case-by-case basis when assessing waters that are not currently included in Category 1 or Category 5 (e.g., older data could be used if conditions, such as land use, have not changed.)

Section 4.3.1 CWA Section 303(d) Impaired Waters List and Total Maximum Daily Limits (TMDLs)

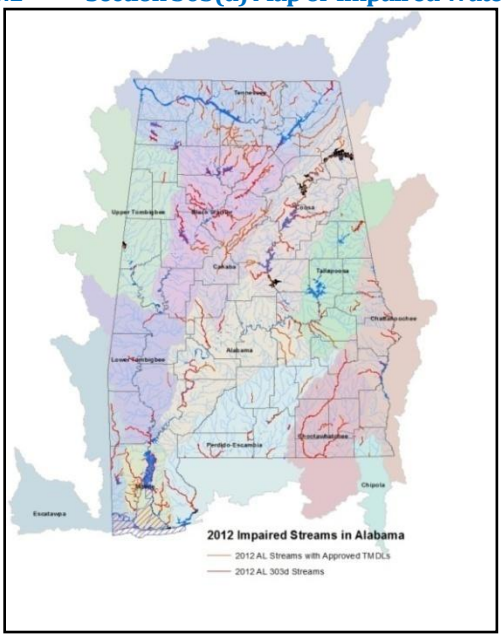
- **Section 303(d) of the Clean Water Act**

States are required by the CWA to compile a list of waters for which implementation of technology-based effluent limitations alone do not ensure attainment of applicable water quality standards. The ADEM Water Quality Branch compiles a biennial Section 303(d) list of impaired waters based on a review of water quality valid science-based water quality data and information. The list is submitted to EPA for approval after an opportunity for public comment. The list includes the causes and sources of water quality impairment and a schedule for development of a Total Maximum Daily Load (TMDL) for each pollutant causing impairment. The Section 319 nonpoint source program grant guidelines (2013) places strong emphases on funding watershed-based projects to mitigate NPS-impaired waters identified on Section 303(d) lists.

- **Total Maximum Daily Load (TMDL)**

The amount of each pollutant causing impaired water quality that can be allowed in a waterbody is determined. Seasonal variations and a margin of safety (accounts for uncertainty) are also considered. TMDLs are developed by ADEM according to a specified schedule and submitted to EPA for approval and public comment. The EPA or consultants may also develop TMDLs for the state. The AL NPS Management Program and Section 319 grant program highly recommends that watershed-based management plans be developed using NPS information and targeted pollutant load reductions presented in an approved TMDL. A TMDL is a very useful tool to align watershed priorities, leverage resources, and implement water quality protection and restoration activities.

Figure 4.3.1 Section 303(d) Map of Impaired Waters (2012)



- **Long-term Nonpoint Source TMDL Program Initiatives**

The AL NPS Management Program and the Section 319 grant program will continue to support water quality protection and restoration activities in partnership EPAs, "Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program." The vision, goals, milestones and timelines presented therein are not regulation, policy, or mandates; however, they do provide a focus for efforts in Alabama to better manage CWA 303(d) program activities over the next decade (2014 - 2022). Key activities include engagement; prioritization, protection, and integration; alternatives; assessment (site-specific); and an evaluation of the accomplishments of the long-term management program vision and goals.

- **Program Integration**

Neither the Clean Water Act nor the EPA requires states to implement TMDL pollutant load reductions; however, integration of the TMDL program with the Alabama NPS Management Program and Section 319 grant program is an EPA and ADEM programmatic priority for waters impaired solely or partly by nonpoint sources of pollution. Approved TMDLs continue to be used by the public and private sectors in Alabama to develop and implement watershed-based management plans (e.g. integration and leveraging of relevant state, local, and federal land management programs, resources, and authorities) and is often coordinated and facilitated by the Alabama Clean Water Partnership.

- **Watershed and Water Quality Protection and Restoration**

Section 319 projects may necessitate the implementation of a combination of regulatory, non-regulatory (e.g. incentive-based) actions to achieve TMDL pollutant-of-concern load reductions. Non-regulatory activities may include development and implementation of management measures and practices, pollution prevention, and habitat protection or restoration. Regulatory actions may include the issuance or revision of wastewater and stormwater permits to include permit conditions to mitigate nonpoint source runoff problems. Permit conditions may be numeric effluent limitations or narrative requirements as needed to achieve the necessary pollutant load reductions. And, although TMDLs may be developed at various areal extent scope and scale, Section 319 funded watershed-based management plan activities (i.e., EPA-defined 9-key elements - Appendix A - EPA Section 319 grant guidelines) addressing the NPS components of a TMDL are primarily implemented at the 12-digit Hydrologic Unit Code scale.

Section 4.3.1.1 Targeting and Prioritizing NPS Impaired Waters

- **Targeting**

The State of Alabama Water Quality Monitoring Strategy provides a systematic and integrated plan for gathering Section 319 grant program information to characterize NPS water quality; identify causes, sources, and impacts; and measure funded programmatic and project-specific implementation success. The Strategy is implemented on a 5-year monitoring cycle. An in-depth review of the Strategy is conducted at the end of each 5-year cycle.

Water quality planning and coordination meetings are conducted annually between the NPS / Section 319 programs, ADEM Water Division and Field Operations Division staff whom are involved in water quality monitoring, criteria standards development, and permitting. This partnering process continues to build on existing plans and monitoring capabilities and provides an efficient process to address state waters over time. It is an efficient mechanism to coordinate and discuss current and future needs, initiatives and timelines to satisfy various goals and requirements pursuant to the Alabama Water Pollution Control Act, Alabama Environmental Management Act, Clean Water Act, and applicable components of the State of Alabama Continuing Planning Process. Normal-process targeting of agency water quality prioritizing resources (e.g., Performance Partnership Grant) may be preempted at the discretion of the Director of ADEM to address unforeseen or emergency environmental crises and situations; natural disasters; human health risks and threats, or other emerging federal, state, or local environmental issues and needs.

- **Prioritization**

Section 303(d)(1) of the Clean Water Act requires each state to establish a priority ranking for impaired waters it identifies on the CWA Section 303(d) list taking into account the severity of pollution and the designated uses of such waters (i.e. Category 5 waters). The ADEM implements an annual statewide water quality monitoring strategy to monitor waters of the state and then uses that data to list impaired waters and develop TMDLs. Draft TMDLs are dependent upon science-based monitoring and assessment data available to ADEM because water quality data is the primary driver in the TMDL development process. This strategy involves placing each impaired waterbody/pollutant combination into one of three priority categories. Typically, waters are given a "high" priority when resources are

available to develop the TMDL within the next two years. For "medium" priority waters, not all resources or tools are available, but the TMDL is expected to be developed within the next three to seven years. For "low" priority waters, resources are not readily available and the TMDL is scheduled to be developed in the next 8-12 years. The following priority ranking factors may also be used to establish the timing for development of a TMDL:

- Complexity
- Pollutants of concern
- Need for additional data and information
- Sources of the pollutants
- Severity of the impairment
- Pending rules and regulations
- Spatial extent of impairment
- General watershed management activities (e.g. 319 grant activities and watershed management planning
- Existence of endangered and sensitive aquatic species
- Degree of public interest and support for particular waterbodies.

- **Prioritization Initiatives**

The Alabama Clean Water Partnership (CWP) is integral to NPS Management Program and Section 319 grant efforts to systematically prioritize impaired waters for development and implementation of watershed-based management plans. The CWP is also instrumental in prioritizing waters for the USDA National Water Quality Initiative.

The ADEM is a partner in the USFWS Strategic Habitat Unit initiative and efforts to address priority impaired waters in the Bear Creek watershed in the Tennessee River Basin in collaboration with TVA, GSA and others.

Much coordination exists between federal, state, and locally sustained EPA Gulf of Mexico Program, USDA Gulf Mexico of Initiative and the EPA - National Estuary Program (Mobile Bay) . Although some targeted waters are not Section 303(d) listed, efforts continue to address environmental impacts and threats and socio-economic issues and concerns.

Section 4.3.2 CWA Section 319 Monitoring

a) Aligning NPS Programmatic Priorities:

The Alabama NPS Management Program continues to emphasize a watershed-based management approach to protect and restore water quality whenever and wherever environmentally and economically practicable and feasible. In addition to the annual coordination and planning meetings between ADEM staff involved in monitoring, criteria and standards and permitting; the Section 319 grant program is well integrated with several other relevant federal and state environmental programs and processes. These partnerships ensure that NPS management program priority-setting processes and resources are aligned, increases efficiencies, and effectively achieves water quality protection and restoration success. The Section 319 program continues to address AL NPS Management Program goals and objectives by coordinating, cooperating, collaborating and communicating with a multitude of NPS partners to plan, leverage resources, and implement several statewide and locally-specific programs, project and initiatives, including but not limited to:

- Total Maximum Daily Loads (TMDLs)
- Coastal Nonpoint Pollution Control Programs including CWA Section 6217 (CZARA)
- NWQI and "Farm Bill" conservation programs and (USDS-NRCS-Alabama)
- State Revolving Fund (SRF)
- State agricultural conservation programs (SWCC and SWCD)
- Nutrient management frameworks and strategies
- Water quality monitoring and assessment
- Animal feeding operations (AFO/CAFO)
- Pesticide applications
- Resource Extraction
- Urbanization
- Groundwater

- Drinking water / source water
- Clean Lakes (CWA Section 314)
- Clean Vessel Act
- Water Quality Certifications / Dredge and Fill Activities (USACOE, EPA, ADEM)
- Wetlands (natural, constructed, mitigation, identification, etc)
- National Estuary Program (Mobile Bay)
- Forestry - federal (USFS) and state (AFC, USDA-NRCS, ADEM) programs
- Other natural resource protection and restoration programs (e.g. ADCNR, USFWS, TVA, ALDOT, etc)

b) Eligible Section 319 Funded Project-Specific Monitoring Activities

- Nonpoint Source Program Funds: Used to monitor specific water bodies to (1) identify nonpoint sources of pollution, (2) support the development of a watershed-based plan / EPA-acceptable alternative plan; a NPS or mixed-source TMDL; or (3) evaluate the restoration of NPS-impaired waters following implementation of NPS pollution control project(s) funded by Section 319 or other sources.

- Watershed Project Funds: Provides water quality restoration results monitoring data to assess BMP implementation effectiveness (e.g., water quality improvement trends) relative to implementation of a watershed-based management plan or acceptable EPA-approved alternative NPS pollution management plan

Section 319 Program Funds *and* Watershed Project Funds may both be used to monitor water quality in NWQI watersheds including, if necessary, in cases where a watershed-based management plan has *not* been developed. In addition, water quality monitoring that is not targeted toward identifying nonpoint sources of pollution, developing a watershed-based plan or TMDL, or assessing the impact of NPS pollution control activities is ineligible and may not be supported with either NPS program or watershed project funds.

c) Section 319 Applicability

ADEM reports NPS water quality data based on currently available information. Applicable data is used to address requirements of CWA Sections 305(b), 319(a), 303(d), 314(a), and 320. These reports or lists are periodically revised as more up-to-date assessment information becomes available. Data is used to target NPS mitigation resources to address:

- Unimpaired waters that are threatened or otherwise at risk from nonpoint source pollution
- Primary categories and subcategories causing the water quality impairments, threats, and risks
- Waters impaired or threatened by NPS pollution

The state progressively identifies and subsequently addresses impaired waters by:

- Conducting more detailed watershed assessments (pre- and post-BMP implementation)
- Facilitating the development and implementation of watershed-based plans (e.g. EPA defined 9-key element or EPA-approvable alternative plan)
- Implementing watershed-based plans (leveraging Section 319 and other public and private resources)

The ADEM uses long-term water quality monitoring trend data to evaluate overall implementation success of the Alabama NPS Management Program. Concerted efforts are continuously made to ensure that data and information is valid, complete, accurate, reliable, and suitable. The ADEM established the interdisciplinary Office of Environmental Quality to ensure all monitoring and assessment processes and protocols conducted by ADEM are up-to-date and of the highest quality. The State of Alabama Water Quality Monitoring Strategy provides a systematic and integrated plan for gathering NPS information to characterize the causes and sources of water quality impacts and the State of Alabama Continuing Planning Process provides an efficient mechanism to coordinate long-term planning, initiatives and timelines.

The scope and scale of problems associated with NPS pollution is large, complex, and highly variable. Basing AL NPS Management Program and Section 319 grant program implementation success and performance on relatively short-term indices can be inherently problematical and attributable to a multitude of human and economic challenges such as:

- Competing priorities and demands on natural resources
- Economic conditions

- Adverse weather conditions or natural disasters
- Technological changes
- Population growth and shifts
- Changes in land use patterns
- Delays in assessment, monitoring, and analyses between the time an action is taken and results are reported
- Data may be unavailable for a particular period (e.g. certain data only collected on an annual, biennial, 5-year rotation, or irregular cycles)
- Delays related to data usefulness and reliability (e.g. problematic quality assurance/quality control)
- Watershed and water quality health is sometimes not immediately apparent (e.g. outcomes may not become apparent during a particular timeframe)

The comprehensive, biennial CWA 305(b) Integrated Report and Section 303(d) lists are the primary sources of "monitored" data and information used by ADEM to assign Section 319 "*watershed project fund*" priorities. Baseline monitoring to identify and characterize a watershed and monitoring to support development of a watershed-based management plan or TMDL are not eligible for Section 319 "*watershed project*" funding. Although Section 319 grant guidelines do allow "*program funds*" to be used for monitoring and assessment activities; those funds are expended by ADEM to provide for NPS program staffing, implementation of the State of Alabama Water Quality Monitoring Strategy, and targeting CZARA 6217 and other ADEM coastal NPS program implementation activities. Therefore, Section 319 grant *program funds* are generally not available to public and private entities for water quality monitoring purposes.

The AL NPS Management Program endorses and the Section 319 grant as administered by ADEM recommends the *Monitoring Guidance for Determining the Effectiveness of Nonpoint Source Controls* (EPA 841-B-96-004, 1997) to watershed stakeholders who plan, implement, and evaluate NPS projects and BMP implementation success. It is recognized that some waterbodies and watersheds do respond differently (spatially and temporally) to the implementation of various structural measures and nonstructural best managerial practices and activities. Even after appropriate practices and measures are effectively implemented and maintained, quantifiable improvements in water quality may not be conclusively ascertained if ultimate project success measures are based upon a strictly-defined timeframe (end outcome).

d) Request for Proposals (RFP) and Project Criteria:

The following Request for Proposals (RFP) factors (singularly or in combination, generally targeting both AL NPS Management Program and Section 319 grant funding priorities, include but is not limited to:

- Alabama Clean Water Partnership priorities
- Implementation of an EPA 9-key element watershed-based management plan
- Implementation of NPS components of a TMDL
- Achieve priority Section 319 grant and impaired waterbody pollutant of concern load reductions
- National priority such as the USDA National Water Quality Initiative (NWQI)
- Environmental protection and economic feasibility
- Builds and sustains partnerships with federal, states, and other public and private sector organizations
- Human health considerations including fish and shellfish consumption and drinking water source protection
- Ecosystem integrity and health including ecological risk and stressors
- Restores beneficial uses of water
- Vulnerability of surface or groundwater to additional environmental degradation
- Demonstrates water quality-based improvement results
- Implementability (e.g. garners watershed, stream segment, or project site-specific water quality improvements)
- Enhance BMP effectiveness water quality monitoring data
- Leverage and coordinate public and privates sector resources and actions (other than Section 319(h)
- Other federal agency priorities (USFWS Strategic Habitat Unit watersheds; National Estuary Program, Gulf of Mexico Program, CZARA 6217, etc.)

Section 4.4 ADEM Annual Water Quality Monitoring and Assessment Strategies

a) Overview:

The ADEM Rivers and Reservoirs Monitoring Program (State of Alabama Water Quality Monitoring Strategy) is a water quality based monitoring and assessment program designed to document the links between the trophic status conditions of non-wadeable rivers and publicly-owned lakes/reservoirs with science-based water quality monitoring and assessment results. The Tennessee Basin is assessed through a collaborative agreement between ADEM and TVA. Assessments of nonwadeable waterbodies complement the assessments of wadeable rivers and streams. Assessment of water quality in tributary embayments allow for more definitive determinations of water quality because embayments function as the settling basin for nutrients and sediment originating upstream in the flowing portion of the tributary; i.e., full expression of the biological impacts of NPS pollution impacts is often observed in the embayment. Assessing rivers, reservoirs, streams, and tributary embayments is used to indicate the extent of NPS impacts (**Table 4.4.A**) on water quality of and provides a valid basis for targeting NPS mitigation resources.

Table 4.4.A Sources and Areal Extent of Impaired Waters

Sources	Miles
Agriculture	515.16
Atmospheric Deposition	837.85
Collection System Failure	46.68
Contaminated Sediments	46.43
Feedlots	8.46
Industrial	113.83
Land Development	220.48
Municipal	459.06
Natural	71.31
Non-irrigated Crop Production	131.79
Pasture Grazing	398.23
Sources Outside State	30.78
Surface Mining	127.62
Surface Mining	475.83
Unknown Source	160.14
Urban Development	90.75
Urban Runoff/Storm Sewers	401.26

(Derived from 2012 Integrated Water Quality Monitoring and Assessment Report, Table 2-3)

b) ADEM Statewide Water Quality Monitoring and Assessment Approaches

The ADEM monitoring and assessment strategies incorporate a combination of fixed, targeted, and probabilistic monitoring sites that meet multiple Department and other resource agency monitoring goals and objectives. This approach enhances the detail of monitoring data collection and increases watershed spatial assessment coverage and total stream miles monitored during each rotation. While surface water monitoring is conducted within the priority/targeted river basin; more intensive or frequent data may be concurrently collected from other major river basins or priority watersheds identified by ADEMs Water Quality Branch, NPS Unit, and Field Operations Division. Intensive monitoring is sometimes necessary to evaluate trends at specific stations and project locations. A primary objective is to collect adequate physical, chemical, and biological, data so that segments of all waters of the state are categorized in Alabama's Water Quality Report to Congress (i.e., the Section 305(b) Integrated Report). The overall annual water quality monitoring strategy enables ADEM to better establish water quality criteria that reflect watershed health and water quality conditions and characteristics; enhances public knowledge and awareness relative to making informed decisions regarding whether a waterbody is meeting its designated uses. In addition, the data is critical to refining existing water quality criteria to better protect water uses and benefits.

Applicable programs, processes and procedures are publicly-available in the State of Alabama Water Quality Monitoring Strategy. This Strategy is implemented in all major river basins by ADEM (**Figure 4.4.B**) using an annual statewide monitoring and assessment strategy (**Table 4.4.C**). An in-depth iterative, planning and assessment review of the Strategy is completed at the end of each five-year cycle. Interim reviews are conducted annually to assure project plans, initiatives, needs, and resources are coordinated. Annual meetings include staff with expertise in water quality monitoring, criteria/standards, permitting, and NPS management and Section 319 programs. A core set of parameters is set for coastal, non-wadeable rivers and reservoirs, wadeable rivers and streams.

A statewide approach builds on existing monitoring data and capabilities and is designed to effectively address multiple program priorities over time, including sensitive areas such as wetlands, outstanding natural resource waters and drinking water supplies. Each ADEM annual monitoring planning strategy enhances long-term program plan objectives, design, and indicators. Annual meetings are conducted to discuss future initiatives and a timeline to

address incremental improvements necessary to incorporate requirements outlined in EPA's Elements of a State Water Monitoring and Assessment Program and to satisfy water quality monitoring priorities and requirements pursuant to the Alabama Water Pollution Control Act, the Alabama Environmental Management Act, and the Clean Water Act.

The ADEM statewide monitoring approach is useful as planning tool for both the AL NPS Management Program and Section 319 grant program. The data is used to document the effectiveness of NPS best management practice implementation, improvements in water quality, and to convey that information to a mix of public and private sector entities. It is important to note that in many cases, NPS improvements in water quality often occur over an extended period of time. For large watersheds (HUC 10 or 12) and long-term projects (e.g. USDA - National Water Quality Initiative), multiple year monitoring cycles may be required to adequately link water quality improvements with direct implementation of NPS best management measures. While chemical, biological and physical water quality data is essential, visual observations, surveys, and changes in public attitude and perceptions may be used in Alabama to assess Section 319 grant project effectiveness. Citizen volunteers may also contribute to the state's annual monitoring, assessment and evaluation strategy by helping to select locally valued resource waters for monitoring, identifying and documenting problems, and securing monitoring site access and project participation from land owners.

Figure 4.4.B Major River Basins of Alabama (8-digit HUC)

Table 4.4.C ADEM Annual Monitoring and Assessment Strategy Grouping

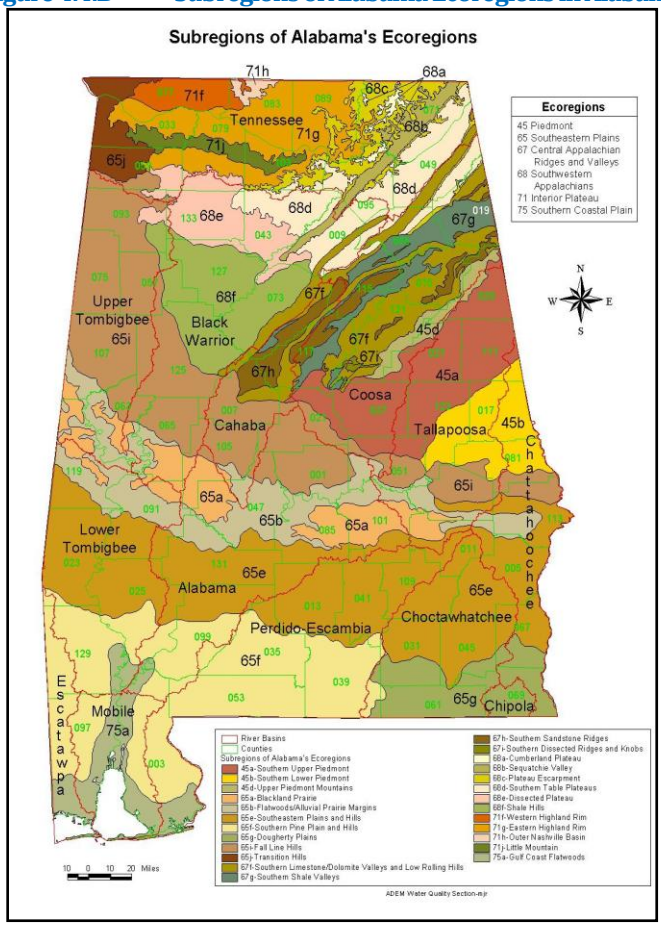
River Basin
Escatawpa / Mobile / Lower Tombigbee / Upper Tombigbee
Black Warrior / Cahaba
SE Alabama (SEAL: Chattahoochee / Chipola / Choctawhatchee / Perdido-Escambia)
Tennessee
Alabama / Coosa / Tallapoosa

Section 4.4.1 Ecoregions

Ecoregions are defined as areas of relatively homogeneous geographic patterns and composition of biotic and abiotic characteristics (e.g. geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology). ADEM collects data from least-impaired reference reaches in each ecoregion in Alabama to help define site classes and as a basis of comparison for other waterbodies within the same ecoregion. The ADEM targets Level 4 ecoregions (sub-ecoregions) to select and sample least-impaired monitoring locations. Long-term ecoregional reference reaches,

established to reflect the best attainable conditions present within a specific ecoregion, are sampled to provide baseline data for comparison to other streams within the ecoregion. Ecoregional reference reaches sampled each year are selected to compliment the Level IV Ecoregions within any given basin group. Improving the correlation between watershed disturbances, stressors, and biological conditions is expected to improve overall estimates of NPS pollution impacts on water quality and help validate the effectiveness and success of AL NPS Management Program and Section 319 grant funded watershed project / management measure and practice implementation (based on "best attainable" characteristics of the targeted watershed or reference site condition correlations).

Figure 4.4.B Subregions of Alabama Ecoregions in Alabama



Section 4.5 Wetlands

Wetlands are important ecosystems. They provide flood protection, erosion control, recreation, aesthetics, and natural resource benefits. Unlike most other habitats, wetlands directly improve water quality. Because of its cleansing benefits, wetlands can be considered a "natural" NPS pollution management practice. Strategies to restore and protect and maintain wetlands continue to be an AL NPS Management Program priority (**Table 4.5**). The Alabama NPS Management Program and CWA Section 319 grant program are intricately linked to and leverage NPS resources of the following wetlands protection and restoration initiatives and strategies:

a) The ADEM Wetland Program Plan (2011, as updated) and Wetlands Monitoring Program (Alabama's Water Quality Monitoring Strategy) presents planning and implementation goals and objectives for a comprehensive water quality monitoring and assessment program to protect and restore water quality. The document serves as a guideline to ensure that the state wetland monitoring meets the requirement of CWA Section 106(e)(1).

b) Coastal projects which include potential impacts to waterbottoms or the dredging and/or filling of wetlands require permits and/or certifications from ADEM Coastal Programs (Division 8 rules); U.S. Army Corps of

Engineers (USACE); and in some instances the State Oil and Gas Board, and/or the ADCNR -State Lands Division. Some projects, such as the construction of residential piers and projects involving minimal wetlands impacts, may be permitted under a pre-certified USACE General or Nationwide Permit and do not require further review by ADEM.

c) The EPA has established several policies, laws and regulations and technical guidance documents regarding wetlands, including CWA Section 404 dredge and fill and CWA Section 401 state water quality certifications. The ADEM Coastal Section issues Coastal Zone Management Act consistency certifications and CWA Section 401 state water quality certifications for projects proposed within the coastal area. ADEM coordinates regularly with the U.S. Army Corps of Engineers on CWA Section 404 permit applications and wetland mitigation banking issues. The EPA and the Corps utilizes the 1987 Corps Wetland Delineation Manual and Regional Supplements to identify wetlands relative to the CWA Section 404 permit program. The USFWS National Wetland Inventory Maps also provides geospatial data for wetlands and surface water features.

d) The EPA National Estuary Program (Mobile Bay - NEP) is a non-regulatory program that promotes wise stewardship of the water quality characteristics and living resource base of the Mobile Bay estuarine system. A Comprehensive Conservation Management Plan (CCMP) provides a blueprint for conserving the estuary. The ADEM supports the MB-NEP through participation on their Policy Committee, Management Committee and various working groups and also assisted in the preparation of the NEP comprehensive monitoring plan.

e) The EPA Gulf of Mexico Program is a non-regulatory consortium of five U.S. Gulf Coast states composed of federal, state and local agencies, commissions, Districts, associations, and organizations and citizens working together to restore, protect, and maintain the Gulf of Mexico ecosystem in ways consistent with environmental and economic well-being of the region.

f) Mitigation / conservation banks play significant roles in restoring and enhancing the environmental benefits of wetland resources. Mitigation banks may be approved and administered by public entities including but not limited to the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U. S. EPA, Alabama Department of Conservation and Natural Resources, ADEM, and the Alabama Department of Transportation. Several private entities in Alabama also design and operate wetland mitigation banks. Unavoidable authorized adverse impacts to regulated natural resources such as wetlands, streams and riparian zones, flooding attenuation, or federally-listed species (ecological diversity) are compensated /offset through the purchase of "credits" from an approved mitigation or conservation bank sponsor; rather than restoring, creating, or preserving resources on or near the permitted land disturbance/development activity. The environmental advantages of "banking" relate to long-term conservation, protection and management of watershed health, water quality, and habitat. Economic aspects relate to continued growth and development and permittee time and costs savings and liability negation.

g) Land use activities affected by wetland protection and restoration provisions of the Agricultural Act of 2014, the USDA-NRCS Wetland Reserve Program, and Executive Orders associated with No-Net-Loss and Migratory Bird Protection.

Helpful NPS Management Program Wetland Program Definitions:
Wetlands: For Alabama NPS Management Program and CWA Section 319 grant funded projects, wetlands are "*...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas*." [40 CFR 230.3(t)]

Mitigation Bank: A site where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by U.S. Army Corps of Engineers (USACE) permits. The Corps regulates wetlands and streams under CWA Section 404 and in some cases Section 10 of the Rivers and Harbors Act.

Conservation Bank: A mitigation option where natural resources are conserved and managed in perpetuity for the purpose of offsetting unavoidable adverse impacts that occurred elsewhere, sometimes referred to as off-site mitigation. Most conservation banking sites are approved by the USFWS; however programs that conserve sensitive habitats or other resources can be established through various authorities.

In-lieu Fee Program: Funds are paid to a governmental or non-profit natural resources management program sponsor to satisfy restoration, establishment, enhancement, and/or preservation through compensatory mitigation requirements under USACE permits.

Table 4.5 NPS Program Wetland Protection Priorities

Programmatic Strategies	Outputs	Outcomes
Develop and enhance monitoring and assessment techniques statewide until all wetland areas have been identified, mapped and catalogued using digitization and remote sensing whenever practical Integrate both regulatory and non-regulatory approaches to identify, restore and protect wetlands, achieve no-net loss, provide alternatives to bulk-heading/armoring, and facilitate compensatory mitigation Promote a holistic approach to guide wetland prioritization and protection and fill information gaps Coordinate the Alabama NPS Management Program and CWA Section 319 with wetland initiatives of the ADEM Alabama Coastal Program and CWA Section 6217 Facilitate applicable wetland conservation, protection, restoration components in the development and implementation of watershed-based management plans Facilitate efforts to enhance communication, coordination and consistency between agency wetland programs, and closing gaps and finding opportunities to make wetlands programs work better Develop and distribute Alabama-specific guidance and promote implementation of constructed wetlands to treat NPS storm water and on-site septage pollutants	Identify priority sites for acquisition, protection, and restoration to natural floodplain hydrology Provide information related to critical values, functions, and major types including better understanding of wetland losses Facilitate meetings, seminars, conferences, and outreach materials (print, websites, surveys) Target many and varied audiences such as agencies; municipalities, businesses, industry, environmental, trade and commodity, schools, civic and professional organizations. Assist builders and land developers avoid wetlands impacts by promoting more compatible uses such as public use, open space, or wildlife	State and federal actions to address threats to human and environmental health are holistically addressed and resources leveraged Technical, financial, and technology assistance provided to improve strategy effectiveness and efficiency through enhanced coordination, collaboration, and communication Promotes a sense of public stewardship and sustainable partnerships Economic, social, and environmental benefits enhanced or met Stakeholder wetland literacy, knowledge and awareness enhanced

Section 4.6 National Water Quality Initiative (NWQI)

The USDA Agricultural Act of 2014 (i.e., the "Farm Bill") presents many opportunities to focus funding and other resources on efforts in Alabama to restore water quality impaired by agricultural and silvicultural nonpoint sources of pollution. To support the USDA National Water Quality Initiative during fiscal year 2014 (and subsequent years in which the NWQI continues), the ADEM will devote Section 319 grant and other resources to plan and provide appropriately designed and timed water quality monitoring activities in selected watersheds where circumstances are aligned to assess the effects of conservation practices. Monitoring approaches will consider the extent of conservation practices put in place in the watershed and the lag time between the adoption of conservation practices and expected water quality results.

Section 4.7 Citizen Volunteer Monitoring

The Alabama Water Watch (AWW) is a statewide voluntary water quality monitoring program composed of trained and certified citizen-volunteers who test certain physical, chemical, and biological conditions of waterbodies using standardized EPA-approved monitoring protocols. The statewide AWW program combines the resources and expertise of citizen-based volunteers, a university-based program, and a non-profit association to collect credible drinking, swimming, and aquatic life water quality data and information. Citizen-based training and certification to help volunteers collect, analyze, and understand their water quality data, identify pollutant sources, and track long-term trends to improve water quality and water policy is also provided. The AWW is a founding partner of the international Global Water Watch citizen-volunteer monitoring program.

A Quality Assurance Project Plan (QAPP) is a "blue print" that describes the quality assurance procedures, quality control specifications, and technical activities that must be implemented to ensure that NPS project results achieve the type and quality of environmental data and information needed for a specific decision or use. All volunteer monitoring and assessment project data funded by a Section 319 grant and must have an EPA-approved QAPP developed in accordance with EPA guidelines. Volunteer monitoring guidelines are presented in EPA's, The Volunteer Monitor's Guide to Quality Assurance Project Plans. The AWW program uses EPA-approved Water Chemistry Monitoring and Bacteriological Monitoring quality control/quality assurance plans.

Section 4.8 Human and Environmental Health Protection

4.8.a Fish Tissue Monitoring and Human Health Advisories and Warnings

A statewide Fish Tissue Monitoring Program was initiated in 1991 as a cooperative agreement between ADEM, ADPH, ADCNR, and the TVA. Skinless-fillet composite samples of fish tissue samples from fish weighing a minimum of one pound each are collected throughout the state and analyzed by ADEM for a select list of bioaccumulative organo-chlorine pesticides, metals and PCB contaminants that can pose a risk to human health. Analyses results are then provided to ADPH for their consideration. If data from laboratory analyses warrants, the ADPH is the lead sate agency for issuing fish consumption advisories, as appropriate. The physical condition of important sport and/or commercial fish species is also determined using a "condition indicator" (relative weights) to evaluate trends in the health of a fish community. This fish tissue monitoring program also serves as an "indicator" for the purposes of prioritizing and targeting NPS pollution mitigation resources.

4.8.b ADEM Coastal Waters Monitoring Program

- The ADEM Coastal Waters Monitoring Program was established in 2011 to unify several existing ADEM monitoring efforts under a single program to ensure consistency and efficiency. Section 319 grants and other Department funding is utilized to identify impacts to rivers, streams, reservoirs, and estuaries and other water sources in the coastal area and to subsequently target NPS pollution mitigation efforts as resources allow.

- Alabama's coastal area extends from the upland continuous 10-foot contour (10 feet above mean sea level) to the limit of the state's territorial waters 3 miles offshore. The ADEM (Division 8 Coastal Area Management Program) and ADCNR state lands program share responsibilities of the Alabama Coastal Area Management Program with oversight by the Coastal Resources Advisory Committee.

- The Coastal Zone Management Act (1972) was amended in 1990 and created the Coastal Nonpoint Pollution Control Program (CNPCP) under Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA). This program is jointly administered by EPA and NOAA. The Alabama Coastal Area Management Program (1979) strives to balance management measures prescribed by CZARA with environmental protection with economic sustainability. Section 319 has provided grant funding for CNPCP activities in the past; and beginning Fiscal Year 2014, will dedicate a minimum of $100,000 annually to continue to:

✓ Respond to the 2004 NOAA/EPA joint interim decision document and seek NPS coastal program approval
✓ Develop and sustain implementation of coastal NPS projects to address water quality impacts and threats
✓ Monitor water quality including but not limited to conducting headwater surveys, assessing adverse NPS impacts to watersheds, and prioritizing water quality mitigation activities
✓ Identify and document baseline watershed health / water quality conditions that exist within the two coastal counties including but not limited to agriculture, silviculture, onsite septic systems, urban development, marinas and hydromodification
✓ Correlate management measure needs and implementation effectiveness relative to land uses and proximity to waterbodies in Mobile and Baldwin County subwatersheds
✓ Garner partnerships and leverage resources to achieve final approval of outstanding coastal nonpoint control program conditions

The ADEM Mobile Field Office continues to provide close coordination of coastal NPS activities relative to integration with the Alabama NPS Management Program (Montgomery NPS Unit / Section 319 grant), including NOAAs Clean Marina Program.

4.8.c Coastal Alabama Beach Monitoring (ADEM and ADPH)

The ADEM and the ADPH routinely monitor Coastal Alabama Beach bacteria (*Enterococci*) levels at select swimming beaches on the Gulf Coast and Mobile Bay relative to the federal Beaches Environmental Assessment and Coastal Health (BEACH) Act. The goal is to increase public awareness and provide water quality information (and advisories) to help the public make informed decisions regarding their recreational use of Alabama's coastal waters. The ADPH is responsible for issuing beach water quality advisories. Water quality monitoring results are posted on the ADEM website and ADPH advisories are publicized through press releases and posted on signs at each of the 25 sampling locations. The President's budget for FY13 eliminated funding for Beach Monitoring Programs in all states which will likely eliminate beach monitoring in Alabama beginning in FY15.

4.8.d Groundwater and Source (Drinking) Water Protection

The Alabama NPS Management Program continues to increase coordination of programs, authorities, and funding sources of the Safe Drinking Water Act to protect sources of drinking water from NPS pollution. In order to improve the effectiveness and efficiency of both the NPS and groundwater /source water protection programs, this document incorporates ground water protection strategies of the comprehensive state ground water protection program and source water protection program. In lieu of awarding separate grants under CWA Section 319(i), applicable NPS pollution mitigation groundwater activities may be funded under Section 319(h). The intent is to:

- Encourage integration of the ADEM Groundwater Program and Drinking Water Program (including the Wellhead Protection Program) with the overall Alabama NPS Management Program
- Maximize programmatic flexibility to prioritize NPS pollution causes and effects on groundwater quality

As resources allow, CWA Section 319 funds target source water protection projects for both surface water and groundwaters consistent with provisions of Section 319 grant guidelines (2013). Source water delineations, assessment reports, protection plans, violation data, and drinking water program partnerships are integral to successful implementation of the AL NPS Management Program because these efforts:

- Enhance targeted watershed-based planning
- Link and integrate program coordination, authorities, and funding from diverse resources
- Improve the effectiveness and efficiency of surface water and groundwater protection program efforts

Source water assessment and protection plans are inextricably linked to NPS programmatic goals and objectives. Statewide water quality monitoring and watershed health assessments enable the public to better assess whether NPS pollutants poses real problems or potentially threats environmental or human health. The ADEM Water Quality Monitoring Strategy and Section 319 education and outreach efforts help to ensure that only valid, science-based surface and groundwater protection data and information is presented to the public. The AL NPS Management Program and Section 319 NPS grant program also share common goals with source water protection program under the Safe Drinking Water Act. To that end, the AL NPS Management Program and the CWA Section 319 nonpoint source program continues to seek and leverage the resources of the Drinking Water State Revolving Fund (DWSRF) and the Clean Water State Revolving Fund (CWSRF) as administered by ADEM. Targeted NPS related projects are must be presented in applicable revolving loan Intended Use Plans (e.g. green infrastructure projects). Stakeholders are encouraged to work with the ADEM Source Water Contact to leverage CWSRF loan opportunities for nonpoint sources of pollution that impacts or threatens drinking water sources.

To enhance watershed-plan development and implementation, the MyWATERS Mapper provides information about the density of drinking water intakes and wellheads at the 12-digit HUC level, as does the Nitrogen and Phosphorus Pollution Data Access Tool (NPDAT). The latter also provides modeling estimates of nitrogen loading. The AL NPS Management Program continues to recognize the impacts of climate change and the adverse effects climate change may have on nonpoint source pollution and source water quality, protection and availability.

The EPA National Water Program Strategy: Response to Climate Change (2012) describes the impacts of climate change and its implications for EPA clean surface water and groundwater protection programs. The AL NPS Management Program defers to the EPA, Climate Change Adaptation Plan (Draft 2013, and as finalized), and particularly the EPA Region 4, Adaptation Implementation Plan (Draft 2013, and as finalized), for climate change actions relative to state and local community NPS responses and adaptations to potential increases in extreme weather, floods, droughts and groundwater protection challenges.

Section 4.9 Integration with Other Ambient Monitoring and Assessment Programs

a) Overview

To ensure that NPS programmatic and Section 319 grant funded project needs are coordinated, ADEM partners with several stakeholders to leverage and integrate ambient monitoring and assessment resources. The Alabama NPS Management Program and Section 319 grant funded projects benefit from using established USGS flow gauging stations, the ADEM annual statewide monitoring and assessment approach (river, reservoir, streams, and ecoregional reference sites), and other national and regional programs. Ambient monitoring and assessment water

quality data is used to enhance NPS program and project planning, implementation, and success. These programs also provide:

- Focused / priority data collection capabilities (e.g., GOMP, NEP, TVA, GSA, USGS, public drinking-water systems; academic institutions/ research projects, etc.)
- Beneficial use assessments (e.g., biological/ habitat; attainment of biocriteria and water quality standards)
- Tracking BMP effectiveness and implementation (e.g., BMP, Section 319 project-specific reports; GRTS database; NRCS "Farm Bill"/ NWQI; AFC/ADEM forestry complaint resolution process; ADEM complaint database, public and private sector photographic evidence of problems and successes, etc.)
- State agency and university public outreach programs and forums for sharing monitoring data (e.g., ADPH/ADEM fish and shellfish consumption or other human health advisories)
- Volunteer citizen water quality monitoring and assessment activities (e.g., Alabama Water Watch)

Water quality monitoring or assessment programs that have a quality assurance project plan (QAPP) that has been reviewed and approved by EPA Region 4 may be utilized for Section 319 grant funded project activities. In addition, the AL NPS Management Program endorses and the Section 319 grant as administered by ADEM, recommends that at a minimum, the EPA *Monitoring Guidance for Determining the Effectiveness of Nonpoint Source Controls* (EPA 841-B-96-004, 1997) be used as a foundational guidance document to assist watershed plan developers in tracking project implementation and evaluating the success of projects in achieving state water quality protection goals. The following entities, programs and projects may also provide technical assistance, technologies, financial, and education and outreach resources to enhance the collection, analyses, and evaluation of ambient water quality data:

b) State Revolving Loan Fund (Clean Water SRF and Drinking Water SRF)

The ADEM nonpoint source and Section 319 programs continue to coordinate water quality and watershed restoration and protection activities with the Groundwater and Drinking Water SRF Programs to facilitate:

- Implementation of NPS stormwater runoff best management practices, but do not implement the requirements of a draft or final NPDES permit (e.g., low impact development, green infrastructure, permeable pavement, discharge conveyance, AFOs, etc. may be allowable)
- Source water protection programs
- Operator training and assistance
- Education and outreach activities

c) Planning

✓ The Section 104(b)(3) program may provide grant funding for research, investigations, experiments, training, technological demonstrations, surveys, and studies related to the causes, effects, and extent and prevention of pollution. The Alabama Regional Planning Commissions develops and provides planning documents to ADEM designed to protect, restore, and improve water quality. These plans are also used to develop and implement other NPS watershed-based management plans.

✓ The Alabama Clean Water Partnership (CWP) is integral to NPS Management Program and Section 319 grant efforts to systematically prioritize impaired waters for development and implementation of watershed-based management plans. The CWP is also instrumental in identifying and prioritizing waters for the USDA National Water Quality Initiative.

✓ The ADEM coordinates available resources to implement the USFWS Strategic Habitat Unit initiative and to address priority impaired waters in the Tennessee River Basin in collaboration with TVA, GSA and others.

✓ Much coordination exists between the federal, state, and locally sustained EPA Gulf of Mexico Alliance, USDA Gulf Mexico of Initiative and EPA NEP-Mobile Bay coastal zone programs. Although some targeted waters are not Section 303(d) listed, efforts are underway to address environmental and socio-economic impacts relative to coastal zone water quality and natural resource protection and restoration.

✓ EPA and NOAA continue to provide oversight of CZARA 6217 and coastal nonpoint program approval in Alabama and according to the 2004 Interim Decision document.

Section 4.10 Water Quality Monitoring Data Dissemination

Water quality monitoring data is critical to evaluating NPS impacts on water quality and protecting and restoring water resources. Data helps agencies and the public identify NPS pollution problems or threats, focus limited resources to mitigate those problems or threats, and to document project implementation and mitigation progress and success. The following resources (**Table 4.10**) can provide the public with accessible water quality data relevant to NPS pollution programs in Alabama:

Table 4.10 Public Access to NPS Water Quality Monitoring Data

ADEM Water Quality Reports provide summary technical data collected from rivers, reservoirs, and streams in Alabama and derived from ambient, special project, and screening and intensive survey and assessment activities - primarily using a 5-year rotational river basin monitoring and assessment approach. The data and information contained in these reports is critical to the development and implementation of CWA Section 319 grant funded nonpoint source watershed-based management plans, the development of TMDLs and assessing the effectiveness of management measures implementation achieve priority NPS programmatic pollutant load reductions and TMDL priority pollutants of concern.

The EPA STORET (STOrage and RETrieval) database is a repository of chemical, physical, biological, and habitat data collected and used by EPA, ADEM and other state and federal agencies, universities, private citizens, and others to make their data publically accessible. The STORET WQX (Water Quality Exchange) is the framework by which partners submit data. The STORET Legacy Data Center contains water quality data dating back to the early part of the 20th century and collected up to the end of 1998. As Alabama's state environmental regulatory agency, ADEM (Water Quality Program) submits surface water quality monitoring data to the STORET Central Warehouse.

Valid science-based water quality data collected by ADEM and others in Alabama is publicly available through the EPA Water Quality Assessment and Total Daily Maximum Loads Information website. The state's water quality inventory report information is required to be reported every two years under Clean Water Act Sections 305(b) and 303(d). A summary of Alabama-specific water quality assessment data is presented in the inventory report.

The Watershed Assessment, Tracking & Environmental Results System (WATERS) program provides maps and displays water quality information previously available only from several independent and unconnected databases. EPA gathers water quality information to address watershed health and public drinking water, fish consumption, and swimming waters concerns and to improve state water quality program efficiency, communications, and capacity.

The Consolidated Assessment and Listing Methodology (CALM) process helps to document how the state collects and uses water quality data and information for environmental decision making. Data analyses is iterative and is used determine whether waters meet water quality standards, need to be added to the 303(d) list, or can be removed from the list because they are attaining standards.

The National Water Quality Inventory Report to Congress (CWA Section 305(b) report) is the primary vehicle for informing Congress and the public about general water quality conditions in the United States. This document characterizes state water quality, identifies significant water quality problems, and describes various programs implemented to restore and protect state waters. The ADEM Water Quality program develops and presents Alabama's 305(b) reports.

The Electronic Integrated Reporting under Sections 305(b) and 303(d) (Water Quality Assessment and TMDL Information database, known as ATTAINS, contains environmental information collected by the state to satisfy requirements of Section 305(b) integrated water quality assessment biennial reporting.

Drinking Water and Human Health standards and advisories have been developed by EPA with relevancy to NPS pollution impacts and threats (e.g. pesticides, other chemicals, pathogens). The ADEM, ADPH, and ADAI in Alabama share lead state authority to address these and other environmental protection and restoration issues.

The Water Quality Portal (WQP) is cooperatively sponsored by the USGS, EPA, and the National Water Quality Monitoring Council. ADEM water quality and other agency data is available through the portal.

The ADEM provides an annual compliance report that lists all water systems where violations that have occurred. In addition, drinking water systems are required to provide an Annual Consumer Confidence Report that contains information relevant to point source and NPS contaminants detected in the drinking water, sources of drinking water and treatment processes, and other information.

The EPA National NPS Monitoring Program demonstrates techniques to help states prevent and control NPS pollution on a watershed scope and scale, enhances technical understanding of NPS pollution causes and impacts on water quality, and measures the effectiveness of NPS control measures and practices. Data collected from these studies is suitable for designing the monitoring elements of watershed-based management plans, collecting pre-project baseline data, tracking project implementation progress, and determining the success of management measures implementation to achieve state water quality standards and beneficial uses.

Citizen Volunteer water quality data is available the Alabama Water Watch program. This monitoring program obtains water quality data in a cost-effective manner using a quality assurance project plan that has been reviewed and approved by EPA Region 4. The level of confidence in the data must be acknowledged relative to its use for CWA Section 303(d) listings, documenting AL NPS Management Program implementation success, and Section 319 grant funded project targeting.

Chapter 5: Nonpoint Source Pollution

Section 5.1 Overview

Nonpoint source pollution is not explicitly defined in the Clean Water Act. A working definition of is pollution caused by rainfall or snowmelt moving over or through the ground carrying natural and human-origin pollutants to lakes, rivers, streams, wetlands, estuaries, other coastal waters, and groundwaters. Atmospheric deposition may also be a source of nonpoint pollution. The biennial Section 303(d) Lists compiled by ADEM consistently indicates that the primary causes of water quality impairments in Alabama are nonpoint sources of pollution (**Figure 5.1**), and generally as a result of anthropogenic (human origin) land-use activities.

The term "nonpoint source" generally refers to a source of water pollution other than "point source" pollution which is defined in Section 502(14) of the Clean Water Act as, "…any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. It does not include agricultural storm water discharges and return flows from irrigated agriculture." Point source pollution (i.e., pollutants discharged from the end of a pipe) is regulated through the federal National Pollutant Discharge Elimination System (NPDES) permitting program. However, NPS "polluted runoff" management generally uses a voluntary implementation approach and success can be more complex and convoluted to achieve because of the many and varied diffuse sources. In addition, managers addressing nonpoint sources of pollution, especially on a watershed-based management scope and scale, should recognize that ultimate best management practice implementation effectiveness and project success should be measured in relatively lengthy timeframes, i.e., over 3-5 years or 5-10 year increments.

The CWA Section 305(b) Integrated Report (2012) compiled by ADEM indicates that Alabama's surface waters are generally of high quality. An indication of full classification support status of rivers and streams can be established by evaluating Alabama's Category 4 and Category 5 listed waters. The total mileage for rivers and streams not supporting designated uses is 3,164.2 miles or about 4% of the 77,272 total rivers and streams miles in Alabama. In addition, approximately 71% of Alabama's publicly accessible lakes and reservoirs fully support their designated uses. The ADEM has developed nutrient criteria for reservoirs in an effort to better manage eutrophic conditions.

Alabama's estuaries enjoy overall good health. Pathogens, mercury, and litter problems continue to be primary NPS pollutants of concern in many coastal watersheds. The ADEM coastal water quality monitoring program participates in several interagency federal and state programs to assess and better protect the Mobile-Tensaw River Delta, one of the best preserved major river deltas in the United States.

Alabama's groundwater resources continue to be effectively regulated and managed relative to ADEM Water Programs (e.g. to the Underground Storage Tank Program; the Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation and Liability Act; Underground Injection Control, and the Wellhead Protection Program). The lack of chronic detections of pollutants in public water supply groundwater sources is a good indication of Alabama's high ground water quality and efforts to manage this resource.

Science-based water quality monitoring data is used to assess multiple NPS programs, projects, and trends over time and to demonstrate the effectiveness NPS best management practice planning and implementation in meeting state water quality standards and achieving beneficial uses. Nonpoint source data analysis (e.g. hydrology, topography, soils, climate, land uses, habitat, geology, biological/chemical/physical integrity, water quality problems, etc.) involves mapping, modeling, monitoring, and field assessments to link sources of pollution to the extent to which they may impair water quality. The CWA Section 305(b) Integrated Report, prepared biennially by ADEM, indicates that significant bodies of waters in Alabama continue to meet water quality standards and classifications.

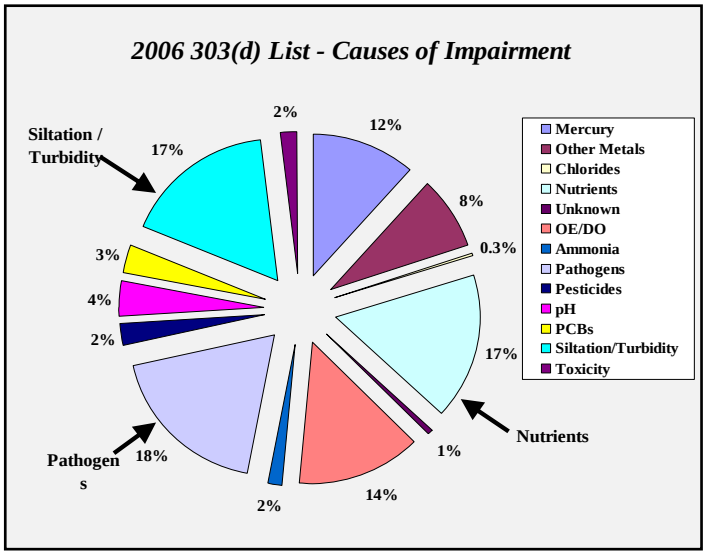
It is highly recommended that a holistic, integrated, and iterative watershed-based management approach be continued. Mitigation efforts (preferably on a HUC-12 scale) continue to address both point and nonpoint source pollutant loadings causing problems in a watershed. If a TMDL or TMDLs exists for impaired waters in a targeted watershed, the mitigation of TMDL priority pollutants of concern should be a first consideration. In addition, this AL NPS Management Program document will be reviewed, and as appropriate, revised and updated every five years, to ensure the citizens of Alabama that Section 319 and other NPS funding, technical support and resources are

directed in an effective and efficient manner and state efforts to address NPS water quality issues are maximized and employs the resources, authorities and expertise of all relevant programs.

a) Nonpoint Pollution Causes and Sources

Nonpoint source pollution originates from many diffuse sources. As rainfall or snowmelt moves over and through the ground, the runoff picks up and carries away natural and human-made pollutants, finally depositing them into streams, rivers, lakes and reservoirs, wetlands, coastal/estuarine waters, as well as underground resources (aquifers).

Figure 5.1 Nonpoint Sources of Pollution for Assessed Waters in Alabama



According to the ADEMs CWA Section 303(d) lists, the most common NPS water quality impairments of assessed waters in Alabama, in no particular ranking, are as follows:

Causes

- Pathogens (Bacteria)
- Nutrients (Nitrogen and Phosphorus)
- Siltation (Sediment)

Sources

- Municipal / Industrial Point Sources
- Urban areas / Land Development
- Agriculture (All Practices)

Untreated surface runoff from precipitation events can carry a mix of NPS pollutants to surface and groundwaters. The mitigation of NPS priority pollutants of concern on Section 303(d) lists are priority Section 319 grant funding considerations. The Alabama NPS Management Program and Section 319 grant works to mitigate Section 303(d) listed causes and their sources (specifically or in combination), including:

- Nutrients (organic enrichment/low dissolved oxygen) from agricultural, silvicultural, urban development and other land uses (e.g. nitrogen and phosphorus)
- Sediment (siltation/suspended solids) from improperly managed construction sites, agricultural and silvicultural lands, and unpaved roads
- Pathogens and nutrients from livestock, pet wastes, land application of animal waste, faulty septic systems
- Excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas/lawns and gardens
- Oil, grease, and toxic chemicals from urban runoff and energy production (oil and grease leakage from cars onto streets and parking lots or disposed of improperly down storm drains)
- Acid mine drainage and heavy metals from abandoned mine lands
- Pollutants resulting from atmospheric deposition and hydromodification
- Habitat alteration and streambank degradation is generally associated with livestock having unrestrained access to streams and urban sprawl
- Litter such as paper, plastic, metal pieces, bottles, cans, and grass clippings

- Thermal pollution generally derived from heat absorbed by urban area runoff from hot pavements, parking lots, rooftops (i.e. impervious surfaces) and unvegetated/exposed riparian areas

Section 5.2 Management Challenges

a) Overview

Nonpoint source water quality protection and restoration in Alabama can engage a multitude of administrative, technical, legal, financial, and political entities to address a variety of issues, concerns, and challenges. Management approaches are generally multifaceted and convoluted. Implementation success is often correlated to financial resources, citizen knowledge and awareness, technical assistance and technology transfer, regulatory aspects, voluntary participation, and local interest, wants and needs. State resource agencies, counties, and communities continue to face increasing competition for dwindling amounts and sources of financial capital; therefore, NPS mitigation resources must be carefully directed to achieve the greatest watershed health and water quality protection and restoration benefits practicable. Cooperative partnerships, resource leveraging, project prioritization, and efficient implementation of environmentally-protective and economically-sensible best management practices is critical because control measure attributes greatly influence whether Alabama's investments in environmental and human health protection succeeds or fails. Nonpoint source pollution should be targeted using a manageable watershed-based scope and scale wherever and whenever sensible and practicable; notwithstanding the transcendence of political boundaries. Forming and sustaining partnerships composed of resource agencies, public and private sector interests, advocacy groups, and citizens is a key AL NPS Management Program and Section 319 grant-funding program driver because cooperative partnerships often ensure fairer, efficient, and more responsive delivery of mitigation resources and project implementation success. Employing a neutral entity (such as the Alabama Clean Water Partnership) helps to ensure that NPS management decisions are realistic, impartial, and responsive to both statewide and local watershed concerns, issues, and audiences. Having clear NPS water quality goals is especially applicable because of strong beliefs by landowners in Alabama in private property rights and minimal government intrusion relative to land use.

b) Planning

Section 319 grant-funded watershed-based plans and projects are designed to represent the local NPS stakeholder's best intentions and expectations for protecting or restoring watershed health and water quality; however, depictions of project implementation potential and success can be tenuous (e.g., under or over-estimate ultimate reality and outcomes). Although measurable water quality benefits are expected, efforts to adequately address all NPS pollutant causalities, attributions and other factors (e.g. point and nonpoint sources; sufficient and sustainable human and financial capital) can be inherently complex, compound, and convoluted; thereby greatly influencing project processes, performance, and success. Unpredictable or unexpected natural or anthropogenic obstacles may (and likely will) occur during NPS mitigation efforts. The capricious nature and unintended consequences of these and other extraordinary events can exacerbate implementation of planned control measures and activities, increase pollutant loadings, effect rapid and significant increases in water quality degradation, and challenge pre-project expectations of success indicators and measures. In order to proactively address these challenges, the AL NPS Management Program and the Section 319 grant program will continue to endorse the development and implementation of watershed-based management plans that are:

- Dynamic and open-ended
- Flexible, targeted, and iterative
- Use a mix of water quality-based and technology-based mitigation strategies
- Uses a combination of voluntary approaches and regulatory authorities
- Incorporates a broad-based partnership approach

c) Implementation

The ADEM continues to stress EPA's 9 key elements of an effective watershed-based plan as a critical component of the AL NPS Management Program's "holistic" watershed management approach and to ward off potential watershed planning and implementation issues. The ADEM also assigns the highest priority to implementing watershed-based plans for waters that have completed TMDLs to enhance focus and direction to Section 319 grant funded projects (within reasonable time and cost constraints). It is recognized that watershed-based plans may need to be modified (course corrections) over time (i.e., implemented in a dynamic and iterative manner) to achieve a healthy watershed.

A watershed that is functioning properly is commonly referred to as a healthy watershed. Expectations by the public for a "quick fix" of an impaired watershed / water body are generally not feasible and unreasonable. It generally requires a number of years of planning and implementation of NPS management measures (and valid sciences-based monitoring) to definitively document whether water quality fully achieves and maintains a healthy, or best practicably attainable healthy, status and continues to meet the goals and objectives of the AL NPS Management Program.

The complex and diffuse nature of NPS pollution and the substantial human and financial capital needed to effectively manage it often require sustained support from a coalition of agency resources, programs, and authorities; government officials, the academic community, professional and civic organizations and groups, landowners, citizen volunteers, etc. The AL NPS Management Program strongly supports efforts to develop and implement holistic watershed-based management plans to leverage these public and private resources. A watershed management approach provides the most technically-sound, environmentally-protective and economically-efficient means of addressing NPS water quality threats and impairments. A well-designed watershed plan provides an effective roadmap to holistically guide cost-effective, well-informed water quality restoration and protection efforts. The EPA and ADEM continue to emphasize a watershed-based approach as the primary framework to guide CWA Section 319 grant watershed project funding. Some iterative management decisions may result in resources being "re-focused" to measures, practices and activities to mitigate problems presenting greater human or environmental health risks. Patience and plan flexibility are important keys to realizing long-term success.

Planning and implementation of watershed-based plans is an iterative, adaptive process and encompasses all phases of a watershed-based project (e.g. pre- and post-BMP implementation water quality monitoring; identifying all pollutants of concern, sources, causes and critical areas (i.e., those that generate the most NPS pollution); prioritizing of resources to address impacts and threats, ensuring landowner interest in adopting and maintaining management measures, assessing pollutant load reductions and other measures and indicators of project success, etc.). Watershed-based management plan development in Alabama does not often correlate with insufficient interests exhibited by local communities (e.g., a need to do *something* mind-set is generally inherent), but is rather associated with:

- Providing assurance to local entities that the targeted water quality problem(s) will be fully addressed by the strategies recommended in a plan (e.g., achieves measurable and sustainable outcomes)
- The plan is effective, efficient, and integrates the "correct" mix of partners and resources to fully address the diverse environmental and socio- economic quality-of-life needs and realities of the targeted watershed
- The plan addresses all of the sources and causes of impairments and threats (nonpoint and point sources) to ensure long-term watershed and water quality protection and public health and safety.

Section 319 grant-funded watershed-based projects in Alabama are generally funded for durations of 3 or less years. Some watershed-based plans may be implemented over a longer time frame using a "phased" approach in multiple 3-year increments. The unpredictability of future environmental threats and other impediments to project implementation is best addressed using a cooperative and broadly-inclusive partnership approach (e.g. Alabama Clean Water Partnership) in a timely manner. Project managers should seek course corrections during implementation to better focus Section 319 grant funds and other project resources if water quality monitoring data reveals that project goals and objectives are not being met in a comprehensive and timely manner. Ensuring that all public and private sector partners effectively coordinate, collaborate, cooperate, and communicate is an AL NPS Management Program priority. This approach helps to ensure that limited NPS mitigation resources are leveraged and well integrated with local economic stability and social and cultural based water quality protection and restoration goals and objectives.

d) Indices

The ADEM continues to express capabilities to resolve NPS pollution problems by annually reporting Section 319 successes and the removal of waters from Section 303(d) impaired waters lists. Problems associated with NPS pollution can be large, complex, and highly variable. Long-term trend data and information is relied upon to provide overall project implementation status and to objectively indicate and measure programmatic success. Adequate resources are needed and must be allocated to ensure that NPS watershed health and water quality monitoring and assessment data and information is complete, accurate, reliable, and easily accessible and comprehensible to project managers and the public and private sectors; especially when public funding is involved in protection and restoration

endeavors. Basing NPS programmatic performance on short-term (< 3 year) goals and indices is inherently problematical. Implementation challenges include but are not limited to:

- Competing public and private interests, priorities and demands on water resources (quality and quantity)
- Economic conditions (e.g. federal funding sequestrations, state government / agency financial conditions)
- Weather conditions and seasonal challenges
- Technological modifications and transformations
- Population growth and shifts
- Changes in land use patterns
- Delays between water quality assessment, analyses/evaluation, when the results are presented, and any actions that are taken to redress an issue
- Data collection is hindered by or is not readily available to timely assess a particular management measure, project, or project phase (e.g. resource constraints; inadequate quality assurance/quality control; comprehensiveness; contractual scopes and cycles, etc.)
- Delays in distributing reliable data and information causes its usefulness to be diminished
- Protection and restoration success may not be apparent during a particular funding period or calendar/fiscal year
- Incomplete or inadequate NPS components of a 9-key element watershed-based management plan
- Leveraging and sustaining adequate levels of human and financial capital
- Building and maintaining partnerships (e.g. input, commitment, expertise, etc)

Nonpoint source pollutant load reduction estimates (e.g., nitrogen, phosphorus, and sediment) relative to Section 319 grant funded projects will vary from year to year due to several factors. Load reduction target indices; including but not limited to: landowner/user participation, financial leveraging and incentives, weather patterns and seasonal conditions, soils and other site challenges and conditions, and causes /concentration of the targeted pollutant. The majority of Section 319 grant-funded project pollutant load reduction estimates typically reported by ADEM are reflected in the third or subsequent year of project reporting. This is primarily due to the inherent "lag times" between measure implementation and water quality responses. The STEP-L desk-top computer model is often used in Alabama to provide annual NPS pollutant load reduction estimates when post-project *in-situ* (in-place) water quality monitoring data is absent. Modeled estimates also serve as national database indices of Section 319 project accountability and implementation success.

Section 5.3 Best Management Practices Overview

The implementation of a mix of NPS management measures and practices are generally required to adequately protect and restore watershed health and water quality and to protect unimpaired or high quality water resources. Key strategies of the AL NPS Management Program and Section 319 grant program include achieving priority NPS pollutant load reductions and for all waters of the state and meeting state water quality standards. Comprehensive planning, design, implementation and maintenance of environmentally-protective and economically-sensible measures and practices is essential.

Nonpoint source controls consist of two types :

- Nonstructural: Are generally designed and implemented to prevent the generation of NPS pollutants and to limit their transport off-site. Typical non-structural practices include public education, land use management, preservation/set aside of wetlands and floodplains, and minimizing pollutant runoff from impervious surfaces
- Structural: Are generally technology-based, physical or hard-engineered measures designed to mitigate pollutant discharge rate and volume to achieve NPS pollutant load reductions. Typical structural measures include sediment ponds and detention basins, porous pavement, rain gardens, etc.).

Several Alabama-specific best management practice strategies and action items are presented throughout this document. Practices to mitigate specific "major categories" of NPS pollution are also presented in the AL NPS Management Program **APPENDICES**. In general, is recommended that the public and private sectors and managers of watershed-based management plans consider applicable EPA strategies, practices and measures as presented in **Table 5.3** below. It should be noted that the following resources are suggestions. Updates, revisions, and new resources and technologies are likely to emerge in future years and may be even more adaptable to watershed or project implementation efforts. In all likelihood, appropriate environmentally-protective control measures have been

developed and are applicable to mitigate any NPS impact. It is strongly encouraged that relevant entities develop plans, leverage resources, and work in partnership to implement NPS management controls that best address watershed health and water quality priorities.

Table 5.3 Recommended Best Management Practice Resources

- National Management Measures to Control Nonpoint Source Pollution from Agriculture (EPA 841-B-03-004, July 2003)
- National Management Measures to Control Nonpoint Source Pollution from Urban Areas (Publication Number 004, EPA 841-B-05, November 2005)
- National Management Measures to Control Nonpoint Source Pollution from Forestry (EPA 841-B-05-001, May 2005)
- Stormwater Management for Federal Facilities under Section 438 of the Energy Independence and Security Act (Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act (EPA 841-B-09-001 December 2009)
- National Management Measures to Protect and Restore Wetlands and Riparian Areas for the Abatement of Nonpoint Source Pollution (EPA 841-B-05-003, July 2005)
- National Management Measures to Control Nonpoint Source Pollution from Marinas and Recreational Boating
- (EPA 841-B-01-005, November 2001)
- National Management Measures to Control Nonpoint Source Pollution from Hydromodification (EPA 841-B-07-002, July 2007)
- FY2011-2015 EPA Strategic Plan - Achieving Out Vision (EPA Office of Water)
- Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA 840-B-92-002 January 1993)
- Handbook for Developing Watershed Plans to Restore and Protect Our Waters (EPA 841-B-08-002, March 2008)
- STORET Data Warehouse
- EPA's Healthy Watersheds Initiative
- EPA's 2011-2015 Strategic Plan

Chapter 6: Watershed-based Management

Section 6.1 Overview

A watershed is a bounded land area that provides surface water or groundwater to a stream, river, lake, pond, wetland or other receiving body of water. John Wesley Powell (1834 -1902), was a scientist, explorer, and geographer who opined that a watershed is, "*that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community*." Implementation of a watershed-based management approach is an integral component of AL NPS Management Program efforts to restore impaired waters and protect unimpaired and high quality waters of the state. Cost-effective and integrated processes presented herein are designed to protect, restore and maintain water quality and aquatic ecosystems and are supported by sound science that views watersheds as dynamic systems. Strategies are designed to ensure that state waters meet state water quality standards in accordance with regulations prescribed by ADEM Administrative Code r. 335-6-x-.xx ADEM (Division 6 Volume 2).

Watershed-based management approaches in Alabama consider a variety of dynamic environmental, socio-economic, and administrative factors, including:

- Public health, safety and quality-of-life protection and benefits
- Watershed-based management plan development and implementation status, interest and resources
- Reductions of nitrogen, phosphorus and sediment or other priority NPS programmatic pollutants
- Total Maximum Daily Loads and associated priority NPS pollutants of concern
- Ecosystem conditions and characteristics and impacts relative to environmental and human health risks
- Anthropogenic origins (legacy, current, future impacts)
- Designated state water quality standards and use classification
- Value of the watershed /waterbody to local community-based or statewide economic interests
- Water quality protection benefits relative to economic costs
- Pollutant cause, source, and mitigation complexity
- Vulnerability of streams, waterbodies or infrastructure to current impacts and future degradation
- Aquatic habitat and species diversity, protection and restoration and ecological connectivity
- Coordination, cooperation, collaboration, and communication of watershed-based actions
- Sustainable public and private sector partnerships
- Leveraging of human and financial capital

The ADEM Nonpoint Source Unit continues to focus resources on the development and implementation of 9-key element watershed-based management plans to achieve NPS management strategies of Section 319(h) grant program guidelines and applicable goals and objectives of the AL NPS Management Program. Both the EPA and ADEM strongly endorse a holistic watershed-based management approach as the primary NPS water quality protection and restoration framework. Federal, interstate, regional, state, and local entities have, or are developing, watershed management and water quality protection strategies at varying levels of scale, scope, and specificity. Those plans and actions can contribute significantly to statewide watershed restoration and protection efforts. In addition, ADEM continues to facilitate opportunities to coordinate a mix of NPS programs, authorities, and resources to mitigate priority NPS pollutant load reductions (e.g. nitrogen, phosphorus, and sedimentation), nonpoint source TMDL pollutants of concern, and other natural resource protection issues and concerns, as practicable and as resources allow.

Factors used to prioritize NPS watershed-based management activities may include but are not limited to:

- Waters that contribute high nutrient and sediment loads to waters downstream
- Waters where trend data indicates that water quality degradation is occurring
- Waters that serve as a source water for a public drinking water supply (surface waters and groundwaters)
- Waters near geographic areas where increasing / rapid changes in land use and development is occurring or may occur
- Watersheds, in whole or in part, with unique and valuable natural resources or threatened species and critical habitats of those species
- Impaired waters in watersheds that also contain unimpaired or high quality waters to prevent future impairments
- Restored waters that will require a commitment of long-term resources to ensure they remain unimpaired

The watershed management approach in Alabama is commonly characterized by diverse and well-integrated partnerships, actions driven by strong science and data, and the coordination of priority-setting solutions that incorporate both regulatory and non-regulatory mitigation tools. A strong state partnership framework is highly recommended when identifying, prioritizing, and implementing surface and groundwater improvement measures and practices to achieve federal aspirations of the Clean Water Act. Watershed facilitators associated with the Alabama Clean Water Partnership help carry out these activities in designated major river basins (Alabama-Tombigbee, Tallapoosa, and Tennessee, Black Warrior, Cahaba, Coosa, Coastal, Chattahoochee/Chipola, Choctawhatchee/Pea, and Conecuh and Sepulga Rivers). Their efforts involve but are not limited to leveraging programs, processes, and project-level strategies to meet multiple needs, eliminate duplication of tasks, and allow for effective and efficient use of available resources. The Clean Water Partnership also facilitates implementation of watershed-based management plans. These plans to help the public and private sectors (e.g., community-based groups, units of government, industry, municipalities, special interest / commodity / producer groups, and others) implement environmentally-protective and economically-effective strategies and action items that meet the diverse realities and needs of a priority NPS impaired watershed.

The watershed-based management approach in Alabama strives to target specific geographic areas of "manageable" scope and scale. While there is no rigorous definition or delineation for this concept, the general intent is to avoid targeting a single narrowly-defined pollutant cause or issue on a piece-meal basis; but instead, address all water quality stressors (point and NPS) using holistic management approach. Watershed-based management plans should be designed so that one of the primary outcomes is that the impaired water(s) meet state water quality standards. All Section 319 funded watershed plans should address EPAs 9-key watershed-based plan elements, target priority NPS impaired waters (e.g., Section 303(d) lists), and implemented within a specified timeframe. Components of certain NPS watershed-based plans may be implemented in "phases" over multiple years using multiple Section 319 fiscal year grant funding.

Priority impaired waters are identified in biennial CWA S. 305(b) Integrated Report and Section 303(d) lists compiled by ADEM. The ADEM assessment and monitoring strategy supports CWA Sections 305(b), 319(a), 303(d), 314(a) and 320 programs. Watershed plan implementation progress and success is tracked and accessible to the public in ADEM reports and newsletters, NPS Management Program Annual Reports, the EPA Grants Reporting and Tracking System, EPA/ADEM Performance Partnership Grants reports; and other resource agency, academia, and public and private sector reporting documents and electronic venues.

Section 6.2 Hydrologic Unit Codes

Hydrologic Unit Code watershed identification numbers are critical cataloging / accounting units for measuring AL NPS Management Program and Section 319 grant funded project planning, targeting, implementation, and evaluation status and success. Watershed boundaries define the hydrographic and topographic extent of surface water drainages to a common discharge "receiving water" point such as a stream, river, or coastal waterbody. The most recent Hydrologic Unit Code or "HUC" delineation is known as a Watershed Boundary Dataset (WBD). The latest WBD is a nationally consistent watershed dataset that divides HUCs into 5th and 6th levels and contains the most current 8-digit, 10-digit and 12-digit HUCs. The WBD is available as web-based USGS Hydrologic Unit Maps on the USDA-NRCS-Geospatial Data Gateway. Hydrologic Unit Codes for watersheds in Alabama may also be ascertained using ADEMs web application or EPAs MyWATERS Mapper. These sites are recommended for watershed-based plan development, implementation, and water quality monitoring and assessment efforts.

Section 6.3 Development and Implementation of Watershed-based Management Plans

a) Overview

The development and implementation of watershed-based management plans continue to provide an effective, comprehensive, and integrated approach to address Alabama's diverse water quality impairment conditions, locations, and needs. The CWA Section 319 grant program requires management plans to be developed that address the nine (9) watershed plan elements identified in EPA's Handbook for Developing Watershed Plans to Restore and Protect Our Waters (2008) (and/or EPA's streamlined "Guide" and planning "Introduction" module,) and Appendix C of Section 319 grant guidelines. The level of detail needed to address the nine elements as required by a "good" Section 319 grant-funded watershed-based plan may vary depending on the scale and complexity of the pollution causes and sources. The ADEM continues to place a strong focus on using Section 319 nonpoint source *program* funds to plan and coordinate watershed health and water quality restoration protection efforts and Section 319 watershed *project* funds to implement watershed-based management plans to restore impaired waters. Even if all the information needed to adequately address all nine elements (**Table 6.3**) is unavailable or incomplete, in some instances, water quality restoration activities should continue to press forward.

The nine key watershed plan elements provide reasonable assurance that NPS pollutant load reductions and state water quality standards will be expeditiously achieved. It is acknowledged that even after taking reasonable steps to acquire and analyze relevant watershed health and water quality data (within reasonable time and cost constraints), planning information may be limited, information and load reduction estimates may need to be modified over time (accompanied by mid-course corrections in the management plan), and a number of years of targeted and sustained implementation efforts may be required for a project to achieve its goals and objectives.

Table 6.3 Overview of EPAs 9 Elements of a Watershed-based Plan

Element 1	Pollutant Causes and Sources	Clearly identifies the pollutant(s) to be managed
Element 2	Estimates of Pollutant Load Reductions	Expected load reductions for the measures/practices to be implemented recognizing natural variability and difficulty in precisely predicting performance of over time
Element 3	Management Measures and Practices	Activities, types, locations, costs, and a map
Element 4	Technical and Financial Assistance	Types, amounts, sources, and authorities
Element 5	Information and Education	Enhance public understanding and encourage early and sustained participation
Element 6	Implementation Schedule	Timelines that are reasonably expeditious
Element 7	Milestones	Interim benchmarks to assess implementation progress
Element 8	Progress and Success Evaluation	Load reductions success; attainment of WQ standards; or a need to revise the watershed mgt. plan or a TMDL
Element 9	Monitoring and Assessment	Provide data to evaluate implementation effectiveness

b) Scope and Scale

Watershed-based plans should target a large enough geographic area so that implementation will resolve all water quality problems in the watershed. While there is no rigorous targeted-watershed areal extent delineation, the general intent is to avoid single segments or other narrowly defined areas that do not address all watershed stressors in a holistic, rational and economical manner. Nine key element watershed plans and alternative plans

may be developed in varying levels of scale, scope, and specificity, but for Section 319 grant funding purposes, plans should be based upon the 12-HUC (Hydrologic Unit Code) watershed boundary dataset.

The EPA has developed nine key Minimum Elements of a Watershed-based Plan. The Alabama NPS Management Program and the CWA Section 319 grant program, as administered by ADEM, endorses these elements as critical for achieving improved water quality. In general, ADEM will require these nine key elements to be addressed, as practicable and as information is available, by stakeholders submitting workplan proposals for Section 319 grant watershed project funds.

Section 6.4 Alternative Watershed Management Plans

a) Overview

Some entities already have in place or are developing watershed-based plans and strategies at varying levels of scale, scope, and specificity that may contribute significantly to water quality protection and restoration. The Alabama NPS Management Program promotes the coordination of relevant, existing planning documents that contain some or all of the information needed to address 9-key watershed-based plan elements as required by EPAs Section 319 grant guidelines.

b) Alternative Plans

Recognizing that alternative plans to an EPA 9-element plan may provide an effective roadmap to achieve state water quality standards, ADEM in consultation with EPA, may approve an alternative plan to guide implementation of CWA Section 319 watershed project funds. Watershed plan elements addressed by other planning documents (**Table 6.4.B**) must be readily accessible to the public to maximize their utility in providing a coherent, comprehensive roadmap to effectively guide water quality restoration and protection efforts. Information provided from TMDLs, where applicable, should be used to develop alternative watershed-based plans. The alternative watershed plan developer must provide assurance to ADEM that appropriate scientifically-valid water quality and watershed analyses have been conducted, pollutants of concern have been identified, pollutant load reductions are targeted, and relevant NPS pollution problems will be addressed to restore water quality to state standards. Plans should build on prior planning and implementation efforts. Exceptions are expected when addressing NPS pollution emergency or urgent NPS public health risks.

The level of detail for an EPA-approvable "Alternative" watershed-based plan must:

- Provide assurance to stakeholders that a NPS water quality problem can be particularly and successfully targeted by the NPS best management practices and measures presented in the plan
- Target a geographically-appropriate areal extent to ensure that state water quality standards and beneficial uses can be expeditiously met in a relatively timely, environmentally-protective and fiscally-responsible manner
- Characterize current conditions including but not limited to land uses and the types, variety and complexity of nonpoint pollution causes and sources
- Be of sufficient quality to directly address the goals, objectives, and milestones expressed in the AL NPS Management Program or applicable Section 319 grant guidelines
- Incorporate required EPA (a) through (i) watershed plan elements if the data and information already exists

In accordance with Section 319 grant guidelines (IX.B.ii), EPA will review and approve all "alternative" plans proposed for implementation using Section 319 watershed project funds. At a minimum, the following elements (**Table 6.4.A**) should be adequately addressed:

Table 6.4.A EPA Alternative Watershed-based Management Plan Elements

- An identification of the causes or sources of NPS impairment, water quality problem, or threats to unimpaired or high quality waters
- Watershed / water quality improvement goal(s) and an explanation of how the project is achieving or making advancements towards achieving state water quality standards
- A schedule to guide project implementation and interim milestones to ensure the project stays on schedule
- Proposed management measures (including operation and maintenance requirements) and an explanation of how these measures will effectively address NPS impairments
- Water quality monitoring components, including a description of processes, measures and metrics (e.g., physical, chemical, and biological parameters, stream flows, other ecosystem/watershed health indicators) to gauge project success

Table 6.5.B Potential Alternative Watershed-based Management Plans

- Source water protection assessments and plans
- USDA-NRCS National Water Quality Initiative Plans
- USFWS Strategic Habitat Protection Plan
- ADCNR - Alabama Comprehensive Wildlife Conservation Strategy
- EPA Gulf of Mexico Program Plan
- NRCS Gulf of Mexico Initiative
- ADEM Coastal Programs and CWA Section 6217 (CZARA)
- Alabama Clean Water Partnership / Section 319 funded Major River Basin Management Plans
- TVA - Natural Resource Plan
- EPA's Mobile Bay - National Estuary Program (MBNEP) Comprehensive Conservation and Management Plan (CCMPs) and annual project workplan
- Other planning documents to be developed in the future

An alternative watershed-based plan funded using Section 319 grant watershed project funding must demonstrate to EPA and ADEM that a particular NPS impairment cause is isolated from other contributing sources of pollution in the watershed (e.g., data based on water quality monitoring results, watershed characterization studies, mapping, etc.). The plan must also provide assurance to ADEM that the watershed project will begin to implement solutions within the first year of a Section 319 grant-award. Impairments should not be mitigated in a piecemeal fashion when they are actually part of a larger water quality problem involving multiple point and nonpoint sources of pollution in the watershed. Exceptions are expected if applicable to unpredictable or unforeseen natural events or urgent NPS public health and safety risks.

c) Incomplete Section 319 Watershed-based Management Plans

In a few select cases, the watershed plan developer may provide ADEM with justification as to the reason why a complete watershed-based plan is not necessary. Examples may include:

- The impairment is not specific to a particular priority pollutant cause (e.g. improvement to migratory fish corridors or stream flows, only targets managerial aspects of training, education and outreach; a NPS emergency or imminent human health risk or situation, etc.)
- Protection of unimpaired and high quality waters to prevent future degradation

d) Scenarios Where a Section 319 Grant Watershed-based Management Plan May Not Be Required

In a few select cases, the watershed plan developer may provide ADEM with justification for why a plan is not necessary. Exceptions may include:

- A NPS pollution emergency or urgent NPS public health risk (e.g. efforts to control erosion and re-establish vegetation in the immediate aftermath of a forest fire to reduce pollution affecting drinking water safety)
- An isolated, small-scale water quality problem resulting from one or a few sources of pollution
- Measures will target a selected priority USDA National Water Quality Initiative watershed

The AL NPS Management Program recommends the following watershed restoration and protection resources to watershed plan developers to help in their decision-making processes:
"A Quick Guide to Developing Watershed Plans to Restore and Protect Our Waters*"* (EPA. 2013) that provides a streamlined summary of the, Handbook for Developing Watershed Plans to Restore and Protect our Waters *(2008),* and, "An Introduction to Watershed Planning" (EPA. 2013) which is an online companion module of the "*Handbook (2008).*" These resources provide technical information and decision-making tools to develop effective watershed-based plans and information relative to incorporating EPAs nine key watershed plan elements, as required by CWA Section 319 grant guidelines, into the watershed plan development process. Online watershed management training modules are also available through the EPA Watershed Academy's Distance Learning Program - Water Academy Web.

Section 6.5 Balancing Watershed Restoration and Protection

Watershed restoration and protection efforts can invoke relatively large, complex, and expensive challenges. The impacts of NPS pollution is a vast and pressing nationwide water quality problem. The EPA and ADEM focuses Section 319 grant resources on restoring water quality, primarily NPS impaired waters for waters which TMDLs have been developed. However, EPA may allow for limited flexibility in Section 319 grant guidelines (2013) to

protect unimpaired and high quality waters in Alabama as part of ADEMs annual performance partnership grant award and Section 319 workplan review and approval processes. This approach recognizes that while restoration of priority NPS impaired waters (Section 303(d) listed waters) remains the primary goal of the Section 319 grant program / guidelines, there are important water quality benefits and potential cost savings from protecting high quality waters and/or preventing impairments to waters that currently meet state water quality standards, but whose condition is declining.

Activities to implement watershed-based management plans or acceptable alternative plans for watersheds containing one or more NPS impaired waters are considered to be *restoration* activities under Section 319 guidelines. Restoration activities should:

- Focus on Section 303(d) listed impaired water quality segments and TMDL priority pollutants of concern
- Address NPS conditions and pollutant loadings that may contribute to impairments of downstream waters
- Comprehensively implement a mix of management measures and practices, as appropriate, to holistically address NPS pollution threats and improve water quality and watershed health over a defined timeline

Given limited resources, Section 319 grant watershed project funding cannot realistically be expected to address all impaired waters identified by the state. Priority waters for Section 319 funding are NPS impaired waters listed on CWA Section 303(d) lists prepared by ADEM and approved by EPA. Special Designations and Outstanding Alabama Waters are designated by ADEM and also listed in the biennial CWA S. 305(b) Integrated Report. In accordance with Section 319 grant guidelines, watershed project funds will generally not be targeted to address unimpaired or high-quality waters even though waterbodies may be addressed in a 9-key element or alternative watershed-based management plan.

Section 6.6 Adaptive Management Approach

a) Overview

An updated, comprehensive AL NPS Management Program is critical to demonstrating statewide program accountability. Programmatic effectiveness is contingent on leveraging a mix of funds, resources, and authorities from a wide variety of public and private sector partners involved in preventing, reducing and abating nonpoint sources of pollution. The ADEM strives to direct Section 319 grant resources to address water quality issues using a focused, targeted, and iterative watershed-based management approach; however, population growth, development, and land uses are dynamic and changes in ecosystem function and structure are inevitable. These and other environmental, socio-economic and quality-of-life issues can and do impact water quality.

In order to identify, assess, and mitigate the wide range of NPS impairments and threats affecting waters of the state, the AL NPS Management Program continues to align and recommend iterative and adaptive NPS management programs, processes, and techniques designed to ensure program accountability and:

- Better define and focus resources to effectively and expeditiously achieve programmatic goals and objectives
- Ensures applicable environmental and economic solutions are protective of both water quality and human health
- Incorporates new or improved administrative, budgetary, and valid science-based data and information

As the public and private sectors learn from NPS programmatic successes and errors over time, some strategies processes and activities may be found to work better than others. In those instances, plans should be altered to better utilize limited resources and sustain progress in addressing inherent complexities relative to watershed health and water quality protection. Conversely, if an evaluation of incremental progress reveals that particular NPS mitigation activities results in less than desired water quality or pollutant load reduction outcomes, then the future targeting of that activity under similar conditions and situations should be rejected. Only the most effective, efficient and economical NPS mitigation strategies and action items should be funded. Long-term success is best built on implementing the best measures under similar conditions and circumstances as practicable.

b) Mechanisms

Adaptive management is inclusive, transparent, and designed to enhance progress towards achieving NPS programmatic goals and objectives. The following evaluation and adjustment mechanisms are generally applicable to the AL NPS Management Program:

- Identification and best use of financial resources, technical expertise, and technology transfer

- Forming and sustaining partnerships and coordinating relevant authorities, roles and responsibilities
- Facilitating education and outreach and training to increase public and private sector knowledge and awareness
- Documenting program and project-specific implementation progress as well as successes and adversities
- Collecting and evaluating trends based upon valid science-based water quality monitoring data
- Achieving water quality goals, objectives and milestones within prescribed time frames
- Targeting resources to address emerging or emergency environmental and human health issues and risks
- Enhancing partnerships (e.g. cooperation, communication, collaboration, and coordination)

c) Processes to Update Statewide Programmatic Goals and Watershed-specific Plans

Time frames and processes for receiving and evaluating input relative to Alabama NPS Management Program updates, programmatic goals and objectives, and 9-key element watershed-based management plans are generally open-ended. At a minimum:

- Goals and objectives of the AL NPS Management Program are updated at 5-year intervals
- Watershed-based management plans may be updated by developers/local stakeholders on a continuous basis
- Objectives and milestones may be revised as more recent or improved water quality data and watershed information becomes available; environmental and human health risks and priorities are better understood, course corrections / modifications are mutually agreed upon, and/or new and additional sources of human and financial capital are identified and leveraged
- Strategic decisions, as appropriate, utilizes input from both the regulated and non-regulated community to prioritize and facilitate efforts and processes (as allowable by agency regulations and authorities, contractual conditions, grant award guidelines, etc.)

d) Broad-based Volunteer Principals

The voluntary Alabama Clean Water Partnership and other citizen-based volunteer organizations and outreach venues that support adaptive NPS management principles include but are not limited to:

- Concerns relative to environmental, watershed, water quality and public health protection
- Adjusting strategies and milestones relative to changes in human and financial capital, technology transfer, and technical assistance and other resources
- Regulatory and non-regulatory decision-making processes
- Cooperative management measures and practices planning , implementation, assessment, and reporting
- Opportunities to provide ample public and private sector input in setting and reaching goals and objectives
- Increasing programmatic and project-specific fiscal responsibilities, accountability, efficiencies and productivity
- Ensuring modifications continue to first address the most urgent risks and priorities (e.g., impaired waters, TMDLs), followed by strategies and action items that:
    - Target achievable actions that can be quickly and easily addressed ("low hanging fruit")
    - Stabilize and reduce NPS pollution problems that cannot be cleaned up in the short term
    - Focuses long-term solutions on projects that protect, restore, and maintain water quality in the most environmentally-protective and fiscally responsible manner

Chapter 7: Integration of Federal, State and Local Community-based Programs and Partners

Section 7.1 Overview

The ADEM facilitates the implementation of AL NPS Management Program goals and objectives, coordinates Section 319 grant funded projects, and administers a variety of voluntary and regulatory approaches to ensure state water quality standards are met. These broad scale responsibilities require that various programs and initiatives integrate with and leverage the resources of a mix of cooperative partnerships. Interagency and representative advisory entities provide effective mechanisms to enhance collaboration and communication among the many and varied environmental and socio-economic interests in Alabama. To that end, the ADEM continues to promote and provide resources and outreach to federal, regional, interstate, state, and local agencies; interest groups, industries, municipalities, government officials, academic institutions, landowners, producers, citizens, and others to help ensure that their goals and objectives are well integrated with those of the AL NPS Management Program.

Resource integration is essential. Management strategies integral to sustaining cooperative programs and partnerships in Alabama continue to:

- Emphasize cooperation, collaboration, and commitment for watershed-based planning and implementation
- Expeditiously attain and maintain state water quality standards and beneficial uses of water
- Develop and implement measures to obtain consensus for ascertaining incremental and final water quality protection or restoration outcomes
- Align and leverage program and project-level resources to meet a mutually desired outcome
- Mitigate impaired waters and prevent unimpaired and high quality waters from becoming impaired so that all waters meet state water quality standards as expeditiously as practicable and within the limits of statewide programmatic and project-level resources

The AL NPS Management Program continues to place strong emphases on enhancing linkages and strengthening partnerships with relevant federal, state and community-based sectors. The wide array of ways in which Section 319 funds may be used to support NPS management activities in Alabama makes them well-suited to integration with other program funds; especially those limited to a specific set of activities. Coordination is achieved through focused planning and implementation of water quality-based projects using targeted, iterative processes that employ the resources of many and varied NPS programs and partners. In order to maximize AL NPS Management Program effectiveness, ADEM, as the State lead water quality agency and Section 319 grant administrator, strives to leverage and integrate a diverse mix of relevant NPS programs, authorities and expertise to meet NPS programmatic goals and objectives. Efforts continue to build and sustain NPS partnerships where there are none and support them where they do exist.

The ADEM strives to ensure that its Section 319 grantees have the resources and capacity to implement watershed and water quality restoration projects that will achieve the goals and objectives of the AL NPS Management Program and the Clean Water Act. Several Clean Water Act and non-Clean Water Act programs, authorities, and resources align with and support efforts to mitigate NPS pollution in Alabama. Implementation of the AL NPS Management Program benefits from these opportunities and continues to leverage resources as permissible and practicable. A myriad of public and private sector programs, projects and activities target water resource protection and restoration in Alabama. This Chapter does not list all such partners and resources; however, many are presented below, while others are presented in various Appendixes A - G of this document. And, while all NPS program partners are appreciated and valued; some may be have been inadvertently unlisted below, which is undesirable and regrettable. Examples of public sector partners are presented in **Table 7.1.A** and private sector partners are presented in **Table 7.1.B**. The resources, projects and activities of these and other partners integrate very well with the goals and objectives of the AL NPS Management Program (**Chapter 8**) and implementation of the CWA Section 319 grant program.

Table 7.1.A Public Sector / Agency NPS Management Partners and Approaches

- Efforts supported by Clean Water Act Section 106 funds to conduct ambient monitoring in watersheds where significant NPS/Section 319 planning and implementation is occurring or may occur including nonpoint source TMDL development
- USDA Farm Bill programs including the National Water Quality Initiative (NWQI) and Section 319 water quality success monitoring
- Clean Water Act Section 303(d) Impaired Waters / TMDLs for priority targeting of watershed/water quality restoration projects
- Basin planning under Section 303(e) of the Clean Water Act
- Section 305(b) Integrated Water Quality Report to Congress in relation to listing threatened and high quality waters fro protection
- Clean Lakes Program under Section 314 of the Clean Water Act as supported in Alabama using Section 319 grant funds
- EPA's National Estuary Program (Mobile Bay-NEP), under Section 320 of the Clean Water Act, and the associated Mobile Bay Comprehensive Conservation and Management Plan and annual workplan designed to address NPS and estuarine watershed challenges
- State water quality certifications under CWA Section 401relative to CWA Section 404
- Wetlands protection and restoration programs implemented under Section 404 of the Clean Water Act as well as pursuant to a variety of other federal and state authorities and programs
- Water Quality Management Planning grants funds under Clean Water Act Section 604(b), particularly watershed /community planning
- National Pollutant Discharge Elimination System (NPDES) point source program, particularly with respect to urban runoff, construction and development, and concentrated animal feeding operations
- Coastal nonpoint pollution control programs developed under Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) (implemented through the statewide AL NPS Management Program as applicable to the Coastal Zone Management Act)
- Source water protection (including ground water) programs and Underground Injection Control Class V Well programs under Sections 1421, 1428 and 1453 of the Safe Drinking Water Act
- State Revolving Fund (SRF) loan program under Title 4 of the Clean Water Act
- Federal land management agencies (e.g., USFS, National Park Service)

- Water resource management agencies (e.g., EPA, USACOE, FERC, TVA)
- Natural resource management agencies (e.g., ADCNR, SWCD, AFC, ADPH, ADAI, ADECA, TVA, USFWS)
- Other federal agencies whose policies and practices greatly influence and/or protect riparian areas, wetlands, and other sensitive areas and corridors are the Department of Transportation and the Federal Emergency Management Agency. Both of these federal agencies and the state counterparts (ALDOT and State of Alabama Emergency Management, respectively) have programs that can help protect or mitigate potential impairment to these areas, and both have funding programs that can be used to benefit water quality
- Alabama Environmental Regulations and Laws which include numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements under Title 22 of the Code of Alabama 1975.

Table 7.1.B Private Sector / Volunteer NPS Management Partners and Approaches

- Alabama Clean Water Partnership - capacity building and public/private sector coordination forums in the coordinated implementation of NPS pollution mitigation practices in high priority watersheds
- Gulf of Mexico Alliance and Gulf of Mexico Program - resource management plans and NPS watershed-based initiatives and challenges
- Centers for Excellence in Watershed Protection (AU and AL A&M) providing training and technical assistance for watershed planning and restoration)
- AU - Environmental Institute - facilitation of statewide water resource information sharing
- Alabama Water Watch and Alabama Water Watch Association - citizen volunteer monitoring and citizen awareness
- Alabama Cooperative Extension System (Auburn University and Alabama A&M) - research-based and broad scope and scale technical and education and outreach and assistance
- Regional Planning and Development Councils - stimulate broad-scale environmental, socio-economic protections, interest and solutions
- ALFA and Alabama Farm Bureau - promotes sound agricultural practices to prevent NPS pollutant runoff
- Alabama Power Company - conducts water quality monitoring surveys and research
- Nature Conservancy - planning and conservation of natural resources, flora and fauna
- Natural Heritage Program - provides biological, land use and human context information for watershed plan development and implementation
- Southern Nurseryman Association - promotes and updates the container-grown nursery BMP manual
- Tribal (Poarch Band of Creek Indians) - NPS pollution management and water quality protection and restoration program coordination
- Watershed Authority (Choctawhatchee-Pea-Yellow Rivers) - facilitates broad scope and scale watershed protection
- Academia - provides research and education and outreach to many and varied public and private sector audiences
- Memoranda of Understanding/Agreement and providing Letters of Support (signed by the Director of ADEM)
- Leveraging programmatic and project level funds prevents resource wasteful efforts and duplication of efforts
- Conducting conferences such as the statewide Annual NPS Conference to share information and ideas
- Environmental/Green groups ("Friends of" groups; River Keepers, Cahaba River Society, Tri-Rivers (Coosa, Tallapoosa, Alabama)

Section 7.2 Healthy Watersheds Initiative and Protection of High Quality Waters

a) Overview

The AL NPS Management Program endorses and strives to implement applicable NPS components of EPAs Healthy Watersheds Initiative (HWI) to improve and protect Alabama watersheds, i.e., preventing them from becoming impaired, and accelerating water quality restoration successes. The HWI national framework and action plan was developed to help meet the objectives of EPA's 2011-2015 Strategic Plan to protect, restore and maintain the chemical, physical and biological integrity of the nation's waters and aquatic ecosystems. The HWI complements AL NPS Management Program goals and objectives to maintain state water quality standards and supports holistic watershed planning and implementation efforts. The primary basis for instituting these initiatives in Alabama is to protect high-quality waters including Outstanding National Resource Waters, Treasured Alabama Lakes and Outstanding Alabama Waters. Coordination efforts will continue to integrate the protection of high quality waters with the restoration of impaired waters in Alabama; recognizing the dynamic and interconnected nature of all surface water and groundwater resources in the watershed.

b) Strategies to Protect Healthy Watersheds and High Quality Waters

- Continue to establish and sustain cooperative partnerships to develop and implement resource protection plans to protect healthy watersheds
- Continue to coordinate and leverage federal and state water quality and aquatic resource agency and private sector programs and resources to protect high priority watersheds
- Continue to identify and prioritize watersheds and intact components of altered watersheds using professional, scientifically-sound, strategic, integrated assessment data and information (i.e., list and track protection efforts and success over time)
- Continue to evaluate ecological data and information to help set targeting priorities and protection options
- Continue to incorporate the best regulatory and non-regulatory tools available based on impairment vulnerability, public and private sector project interest, resources, and implementation opportunities

- Incrementally implement statewide and locally site-specific projects and plans by establishing a partnership-based priority ranking system or process
- Measure incremental and overall progress success in meeting public health and natural resource protection goals, including socio-economic benefits. Indicators may be used to tie clean and healthy waters to securing financial incentives for program support and implementation

a) Review state and federal consistency programs and processes:
- Continue to identify federal programs, lands and activities in Alabama that may not be managed consistently with the goals and objectives of the AL NPS Management Program.
- As appropriate, ADEM will seek EPA-Region 4 and/or EPA-HQ assistance to resolve particular federal consistency issues that arise between federal and state agencies relative to the AL NPS Management Program.

Section 7.3 Federal Consistency

a) Overview

According to the Congressional Research Review (2012), the Federal government owns about 2.7% (871,232 acres) of the land acreage in Alabama. Federally owned lands and activities that impact state water quality are not exempt from compliance with Alabama's environmental laws and regulations. Federal agencies with property in Alabama continue to partner with state agencies in developing and implementing watershed-based management plans, provide information on federal land management actions, identify environmental problems, and facilitate actions, programs, policies, and resources necessary to reduce pollutant loadings on federal facilities by specific dates. Agencies and their respective programs and activities subject to federal consistency review are presented in **Table 7.3.A**, **Table 7.3.B** and **Table 7.3.C**, below:

Table 7.3.A Federal Lands and Program Consistency

Federal Agency	Acres in Alabama	Roles and Responsibilities: NPS Pollution Management Program Integration
U.S. Forest Service	670,185	Protects lands, preserve water flows, and provides timber. Manages recreation, livestock grazing, wildlife and fish habitat, and wilderness areas. Coordinates sustained yields that do not impair land productivity.
National Park Service	16,714	Balances preservation of unique natural resources, natural areas, sites of historical interest, and recreational areas with environmental, social, and economic interests.
U.S. Fish and Wildlife Service	32,207	Balances conservation of flora and fauna (priority) with utilization (recreation, hunting, timber cutting) to the extent uses are compatible with species protection needs.
Bureau of Land Management	3,523	Similar to the USFS, but the BLM also administers mineral development on federal lands
Department of Defense	148,603	Maintains air, land, water, and coastal areas for national defense purposes (training/testing). Natural resource conservation programs support, but also acknowledge long-term use and access for primary DOD mission priorities.

Table 7.3.B Federal Statutory Authorities Relevant to Consistency Review

The National Environmental Policy Act of 1969 (NEPA, as amended) is a national policy that requires federal agencies to evaluate and disclose potential environmental effects of federal actions before decisions are made to implement them, and to integrate NEPA project evaluations with other Federal, state, tribal, and local agency planning and regulatory compliance requirements and decisions. CWA section 511(c)(1) states that the only EPA actions under the CWA subject to the NEPA requirements are, "*major federal action significantly affecting the quality of the human environment,*" i.e., new source permits and grants for the construction of publicly owned treatment works categories. This Act is applicable to many a federal agencies that ADEM and other state NPS resource agencies partner with; however, Section 319 grant projects do not fit within either category and are therefore not subject to NEPA requirements.

Section 438 of the Energy Independence and Security Act (EISA) EISA requires federal agencies to adopt a policy that maintains or restores the predevelopment hydrology (e.g., runoff volume, rate, temperature, and duration of flow that typically existed on the site before human-induced land disturbance occurred) of any federally-funded project with a footprint exceeding 5,000 square feet. New development and redevelopment activities must be consistent with guidance developed by EPA. Implementation of this agency-specific policy began in 2011.

Section 10 of the Rivers and Harbors Act (1899, as amended) prohibits the unauthorized alteration of any navigable water of the United States including the excavation or filling of any such water. CWA Section 404 requires the U.S. Army Corps of Engineers (USACOE) to regulate and permit dredge and fill activities in waters of the United States (as covered by Section 10). Federal permit applications most often reviewed by ADEM are issued under CWA Section 404, while some CWA Section 10 applications are reviewed at the request of the USACOE. CWA Section 401 gives authority to ADEM to issue water quality certifications for waters in the State of Alabama. Certifications are issued when there is reasonable assurance that discharges resulting from the proposed activities will not violate applicable water quality standards established under CWA Section 303 and Title 22, Section 22-22-9(g), Code of Alabama 1975, provided the applicant acts in accordance with conditions specified

in the certification. The ADEM also certifies CWA Sections 301, 302, 306, and 307 requirements relative to each submittal. The ADEM Section 401 water quality certification program is conducted in conjunction with CWA Section 404 Individual, General, and Nationwide permits that are issued by the Mobile District of the USACOE. The Department also issues water quality certifications for certain Federal Energy Regulatory Commission (FERC) licensed activities.

USDA conservation programs such as NRCS and FSA are well-integrated in throughout this document. USDA-NRCS Federal agricultural and silvicultural interests are also represented on the State Technical Committee in Alabama and the Alabama Clean Water Partnership where water quality and quantity issues are discussed in a representative public and private sector forum.

EPA grant programs, such as the Section 319 grant program managed by ADEM, are subject to 40 CFR Part 29, "*Intergovernmental Review of Environmental Protection Agency Programs and Activities*." The regulations implement Executive Order 12372 (1982) that requires a "single point of contact" to review proposed Federal financial assistance and direct Federal development projects. This process enhances collaboration between federal, state and local elected officials; is intended to assess the views of state and local elected officials, provides notice of proposed federal financial assistance from EPA to the state government, and communicates specific state plans and actions. The Central Alabama Regional Planning and Development Commission (Alabama Association of Regional Planning Councils) serves as the ADEM "point of contact" for statewide Section 319 grant-funding project reviews and comments.

Additional federal consistency laws and regulations may impact (in whole or in part) implementation of NPS watershed and water quality protection and restoration projects. Standards which may be applicable to effective and efficient implementation of Section 319 grant-funded projects include:

- Project consistency with the ADEM Coastal Area Management Programs and the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.)
- Protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523)
- Protection of wetlands pursuant to EO 11990
- Evaluation of flood hazards in floodplains in accordance with EO 11988
- Protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205)
- Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system
- Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.)
- Conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.)
- Procurement and assistant activities pursuant to EO 11738
- All Federal statutes relating to nondiscrimination, including but are not limited to: Title VI of the Civil Rights Act of 1964 (P.L. 88-352); Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681- 1683, and 1685-1686); Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794);Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107); the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended; the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended; §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee-3), as amended; Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §3601 et seq.), as amended; and any other nondiscrimination provisions in specific statute(s) under which application for Federal assistance is being made; and, the requirements of any other nondiscrimination statute(s) which may apply to Section 319 grant funding or EPA/ADEM Performance Partnership Grant application.
- Applicable requirements of all other Federal laws, executive orders, regulations, and policies governing the Section 319 grant program.

Table 7.3.C Actions Items to Ensure Consistency with the AL NPS Management Program

Programmatic goals and objectives of the AL NPS Management Program are applicable to both federal and non-federal sectors. Programmatic mitigation strategies are targeted, iterative and adaptive relative to federal consistency requirements.

a) Environmentally-protective best management practices and measures, technologies, technical assistance, and education and outreach actions relevant to federal consistency with the AL NPS Management Program goals and objectives include:

- Energy development and exploration (oil, gas, coal) or alternative/renewable sources (wind, solar, geothermal, biomass)
- Livestock grazing, hay and crop production , chemicals and pesticides
- Timber harvesting (wood for housing)
- Construction, development, retrofits, installations, and reclamation
- Recreation and tourism (motorized off-road vehicles, camp-site/public use areas, boating)

b) Actions to ensure Federal lands and land use activities are consistent with AL NPS Management Program goals and objectives include:

- Review of federal proposed-project National Environmental Policy Act documents and respond to requests for comments
- Inspection of federal lands, facilities, installations, and projects for compliance with state water quality standards
- Coordinated design, installation/retrofit of best management practices to mitigate NPS pollutant runoff from developed/developing areas and to protect undeveloped areas (e.g. assess effectiveness, feasibility, coordination, collaboration)
- Reduce, prevent, and control erosion and stream sedimentation (e.g. unpaved roads, trails, construction sites, right-of-ways, ditches, etc.)
- Target Section 319 grant priority pollutants (e.g., nitrogen, phosphorus, and sediment) and TMDL nonpoint source pollutants of concern in watershed-based management plans
- Coordinated best management practices to reduce nonpoint source stormwater runoff volume, velocity, and contaminants (e.g. low impact development; green design and infrastructure new design and retrofits)
- Alabama Clean Water Partnership (participation on Boards, committees)
- Developing and sustaining partnerships with the State Technical Committee and other boards and committees
- Environmental Impact Statement development and reviews

- Watershed-based management plan development and implementation reviews and iteration processes
- Establishing and maintaining Memorandum of Agreements / Memorandum of Understanding (see **Section F.8**)
- Facilitating education and outreach and training opportunities

c) State and Federal laws, rules, regulations, and programs that support coordination and consistency actions relevant to the AL NPS Management Program include:

- National Pollutant Discharge Elimination System - although the state's NPS management program supports a voluntary approach, the NPDES program provides enforceable authorities to ensure water quality is protected. Enforceable NPS management program strategies include the Drinking Water, Groundwater, Construction Stormwater, Municipal, Industrial, Mining Pesticide, CAFO, Clean Vessel, Forestry, Water Quality Standards, Coastal, Air and Waste/Remediation programs.
- Coordination of Section 401 state water quality certifications with Section 404 permits

b) NPS Management Program Inconsistency Resolution Process

Whenever ADEM identifies (or an entity brings to ADEMs attention) federal lands or activities that are not managed consistent with the goals and objectives of the AL NPS Management Program, ADEM will seek timely and satisfactory resolution of the identified conflict. The ADEM (and/or other NPS program partners) will first try to resolve the issue, action, program, or policy inconsistency using an informal telephone call or email advisory notice process. The issue may also be discussed at meetings of the Alabama Clean Water Partnership where the public and private sectors may confer about and resolve perceived or real inconsistency issues and challenges in a neutral open-forum setting. A progressive approach may involve elevation to letter-writing requesting a formal response. Efforts will be made to resolve issues using cooperative, voluntary courses of action. If local dialogues or consistency actions continue to breakdown at the state level, ADEM will request federal resolution assistance from the EPA.

Section 7.4 USDA – NRCS National Water Quality Initiative (NWQI)

a) Overview

The 2008 Food, Conservation and Energy Act ("Farm Bill") presents tremendous opportunities for the State to leverage Section 319 grant and other NPS funding and resources to protect and restore water quality impaired or threatened by agricultural and silvicultural nonpoint sources of pollution. For example, a national priority of the USDA Environmental Quality Incentives Program (EQIP) is to reduce NPS pollution loadings such as nutrients, sediment, and pesticides in impaired watersheds consistent with TMDLs where they have been developed. Several other USDA Farm Bill Conservation Programs in Alabama contribute resources to implement a suite of agricultural-based conservation, restoration, and land retirement measures for wetlands, riparian zones, and areas of critical importance to water quality improvement. The EPA Section 319 grant guidelines (2013) particularly emphasize the significant benefits of working closely with the USDA to achieve mutual water quality protection and restoration goals. In Alabama, (2014) NWQI watersheds eligible for NWQI funding include Cox Mill Creek/Hurricane Creek (HUC 031402011004 - Geneva County) and Upper Scarham Creek (060300010803 - DeKalb County).

The EPA, the USDA-NRCS, and ADEM continue to cooperatively implement the National Water Quality Initiative (NWQI) in Alabama to encourage and facilitate the voluntary implementation of conservation practices and measures in priority watersheds throughout the state. The intent of the NWQI is to invest resources in selected watersheds over multiple years to implement widespread conservation system measures to accelerate water quality improvements and that can be sustained into the future. This cooperative program continues to build and expand partnerships with the agricultural community. Implementation of NWQI efforts is coordinated with Section 319 grant-funded or other EPA-approved alternative watershed-based plans, as practicable and as resources allow. In some cases, efforts required to plan and implement a NWQI project will be human resource intensive and financially significant. Success will depend on enlisting long-term support of local stakeholders and ensuring dedicating resources are constantly available over time through the Farm Bill. In addition to addressing agricultural water quality issues, Farm Bill programs also target non-industrial forestlands (private landowners who own more than 10 acres). In watersheds where agriculture is less prevalent but other land uses threaten water quality, NRCS forest management plans are developed and conservation cost-shared practices are routinely implemented in Alabama to improve, protect and restore water quality impaired by nonpoint sources of pollution.

b) NWQI Water Quality Monitoring

During fiscal year 2014 and subsequent years in which the NWQI continues, ADEM will allot a portion of Section 319 grant resources in its annual workplan to coordinate project selection and monitor water quality in NWQI watersheds in cooperation with NRCS. Selected NWQI watersheds will be monitored (minimum 1 per year) using appropriately designed and timed water quality monitoring protocols to assess pre-project site conditions and where

circumstances are aligned to assess the effects of implementation of conservation practices. Monitoring will consider the extent of conservation practices put in place in the watershed and the lag time between adoption of conservation practices and expected improvements in water quality. The ADEM will work with NRCS to implement and report project success using USDA NWQI Guidance, as updated.

Section 7.5 ADEM Coastal Nonpoint Source Programs

The AL NPS Management Program supports a comprehensive approach to coastal watershed protection. Coastal zone management plans should not be designed to be too rigid; but instead, should be somewhat flexible and adaptable to atypical and endemic natural resources and water quality protection challenges, including but not limited to severe weather-related events and long-term anthropogenic perturbations. Implementation of coastal zone water quality protection and restoration strategies and actions should be adjusted as conditions and priorities change to best protect human health and safety. Continuing to maintain local public and private sector partnership interest and participation; collecting and evaluating science-based monitoring and assessment data, leveraging NPS pollution mitigation resources; and increasing citizen knowledge and awareness are particularly important to coastal pollutant load reduction efforts supported by the statewide AL NPS Management Program and Section 319 grant program.

The statewide and coastal NPS programs continue to seek ways to collaborate, coordinate, cooperate and communicate environmentally-protective and economically-sensible actions to address issues such as stormwater runoff, erosion, impervious surfaces, and ecosystem, human health and aquatic habitat protection. Section 319 grant project priorities include identifying impaired, unimpaired and threatened waters, achieving priority NPS and TMDL pollutant load reductions (e.g. nitrogen, phosphorus, sediment or other pollutants of concern), water quality protection and restoration, and enhancing coastal zone education and outreach, technology transfer and technical assistance. Nonpoint source stewardship efforts for the Mobile Tensaw Delta and the Mobile Bay estuaries will continue to involve both volunteer and regulatory strategies to:

- Mitigate NPS water quality and ecosystem health stressors and impacts as a result of anthropogenic activities
- Improve individual and communal environmental and socio-economic quality-of-life challenges.

Collaborative statewide and coastal NPS program accountability indicators and measures include voluntary implementation of management measures and practices backed by enforceable policies and mechanisms such as rules, regulations, and ordinances; and supporting actions to improve regulated community knowledge and awareness through technology transfer, technical assistance, and economic incentives; and collecting monitoring data to assess strategic programmatic management measure implementation success. Examples of ADEM efforts and partnering opportunities (**Table 7.5.1**) that target coastal NPS water quality issues and concerns include, but are not limited to the following:

Table 7.5.1 Integration of the ADEM Coastal NPS Program with the Statewide NPS Management Program

The Alabama Coastal Area Management Program (ACAMP) has been in effect since 1979. This program regulates various activities on coastal lands and waters seaward of the continuous 10-foot contour in Baldwin and Mobile counties. Implementation of the ACAMP is shared by the Alabama Department of Conservation and Natural Resources - Coastal Section and the ADEM Coastal Section. The ADCNR State Lands Division-Coastal Section is responsible for coastal zone planning activities (e.g. CWA Section 309 Coastal Management Program Strategy Report), while the ADEM Coastal Section is responsible for permitting, monitoring and enforcement presented in ADEM Division 8 Coastal Area Management Program regulations (ADEM Admin. Code R 335-8). Coastal management responsibilities and activities include:

- Continued development and Implementation of the Coastal Nonpoint Pollution Control Program in close partnership with the statewide AL NPS Management Program
- Conducting the Coastal Watershed Survey Program
- Coastal Zone Management Consistency Reviews of federally regulated activities, federal projects, federal permits and federal assistance to local communities
- Conducting studies and projects relative to natural resource management concerns
- Providing funding and technical assistance to local governments, agencies, non-profits, and others relative to coastal resource management

The ADEM-Mobile Field Office provides local coordination of the NOAA Clean Marina Program. This voluntary marina operator and recreational boater initiative provides a valuable role in protecting coastal waters from NPS pollution and satisfies many of the marina management measure requirements under the Coastal Nonpoint Pollution Control Program. Clean Marina Program funding is facilitated in the ADEM-Montgomery office while enforcement of boat septage pump-outs is handled by the Alabama Marine Resources Division. The AL NPS Management Program endorses implementation of environmentally responsible best management practices presented in the Gulf of Mexico Alliance's, Clean & Resilient Marina Guidebook.

The ADEM coastal and statewide NPS staff co-participates in several mutually beneficial and complementary programmatic activities dedicated to protecting and restoring Gulf waters and associated watersheds that drain to the Gulf of Mexico. These linked efforts include representation at various levels in the Gulf of Mexico Program (GOMP), including its Management Committee, Modeling Monitoring and Research Committee, Data and Information Transfer Committee, Public Education and Outreach Committee and Habitat Focus Team. The ADEM coastal and statewide NPS program staff also participate in the Mobile Bay National Estuary Program (MBNEP), the MBNEP Comprehensive Conservation Management Plan, the D'Olive Watershed Management Plan, and implementation of a MBNEP facilitated and Section 319 grant funded erosion and sediment control project (Joe's Branch Watershed). The MBNEP participates in the Alabama Clean Water Partnership program and as a Coastal Alabama-Escatawpa River Watershed Facilitator sponsor with Facilitator staff primarily funded by CWA Section 319 grants provided by ADEM.

The ADEM and the ADPH routinely monitor Coastal Alabama Beach bacteria (*Enterococci*) levels at select swimming beaches on the Gulf Coast and Mobile Bay relative to the federal Beaches Environmental Assessment and Coastal Health (BEACH) Act. The goal of the program is to increase public awareness and provide water quality information (and advisories) to help the public make more informed decisions concerning their recreational use of Alabama's natural coastal waters. The ADPH reviews all data and is responsible for issuing any advisories. All test results are posted on the ADEM website and advisories are publicized through press releases and posted on signs at each of the 25 sampling locations. The President's budget for FY13 eliminates funding for Beach Monitoring Programs in all states; which will likely eliminate beach monitoring in Alabama beginning in FY15.

The ADEM Coastal Waters Monitoring Program (CWMP) provides data to develop indicators and assessment criteria that link chemical, physical, and biological conditions for estuaries and coastal rivers within Alabama's coastal area. This data is used to identify long-term trends in water quality, provide data for the development of Total Maximum Daily Loads (TMDLs), develop nutrient criteria, and to update or revise protocols and methodologies to more accurately assess related water quality conditions for designated estuaries and coastal rivers and streams. The CWMP also incorporates monitoring in priority watersheds identified by the AL Nonpoint Source Management Program to provide corroborating data concerning the effectiveness of BMPs implemented using Section 319 funds. Depending on available resources, approximately 50 stations are sampled for the CWMP each year, to include historical trend monitoring sites and new stations that were added in 2011.

A cooperative Fish Tissue Monitoring Program was initiated in 1991 as a cooperative agreement between ADEM, ADPH, ADCNR, and the TVA. Fish tissue samples from fish weighing a minimum of pound fish each are collected throughout the state for bioaccumulative contaminants that can pose a risk to human health. Skinless-fillet composite samples are screened for a select list of organo-chlorine pesticides, metals (e.g. mercury) and PCBs. The results of these analyses are provided to the ADPH for their consideration. If data warrants, the ADPH will issue fish consumption advisories as appropriate. The physical condition of important sport and/or commercial fish species collected for tissue monitoring is also determined using a "condition indicator" (relative weights) to evaluate trends in the health of a fish community. This program is also an "indicator" support strategy for targeting applicable NPS pollution management resources to priority impaired waters.

The Coastal Zone Management Act (1972) was amended in 1990 and created the Coastal Nonpoint Pollution Control Program under Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA). The CZARA program is jointly administered by EPA and NOAA. The Alabama Coastal Area Management Program (ACAMP) strives to balance management measures prescribed by CZARA-6217 with environmental protection with economic sustainability. Section 319 has provided grant funding for coastal NPS program activities in the past; however, beginning Fiscal Year 2014 and future years, the ADEM will allot a minimum of $100,000 annually (or the lesser amount of 5% of the state's annual Section 319 grant appropriation) to support advancement towards meeting full EPA/NOAA program approval. The minimum Section 319 grant funding set-aside will remain in place until Alabama's coastal NPS is fully approved; however, close communication, cooperation, coordination, collaboration and leveraging of funds between the statewide and coastal NPS management programs will be maintained. The Section 319 set-aside and other public and private funding sources, at minimum, continue to be leveraged and targeted by the ADEM Mobile Field Office to:

- Plan, prioritize, and sustain the implementation of Alabama Coastal Nonpoint Pollution Control Program strategies
- Sustain coastal zone NPS partnerships and leverage human and financial capital
- Document existing baseline natural resource / water quality conditions and characteristics relative to nonpoint sources in the two coastal counties
- Identify threatened and impaired sites, including but not limited to estuary, wetlands, shoreline, streambank, stream channel/ bottom, beach/dune, and riparian area impacts relative to legacy or future anthropogenic modifications
- Collect, evaluate and disseminate pre- and post-project NPS water quality monitoring and assessment data
- Achieve nonpoint control program approval from EPA/NOAA per Joint Interim Decision Document (2004) recommended actions
- Target environmentally protective and economically sensible management measures and practices designed to prevent, reduce, or abate NPS pollution runoff from a minimum of six primary NPS categories (i.e., building upon existing statewide and coastal zone management and water quality programs) including:

✓ Forestry

- ✓ Agriculture
- ✓ Urban Areas
- ✓ Marinas
- ✓ Hydromodification
- ✓ Loss of Wetlands and Riparian Areas
- Correlate NPS management measure effectiveness as it relates to a major pollutant category, land use, priority Section 319 grant guideline or TMDL pollutant load reductions, and/or proximity of the cause to a waterbody for representative priority impaired waters and subwatersheds of Mobile and Baldwin counties
- Conduct NPS studies and surveys relative to headwater streams, estuaries, wetlands, beaches, marine resources, and other Gulf of Mexico watershed and natural resource management issues and concerns
- Review state and local permits and project proposals relative to watershed health and water quality impacts
- Improve public and private sector communication and coordination and sustain collaborative partnerships
- Implement appropriate methods to limit NPS polluted runoff before problems occur (i.e., pollution prevention)
- Enhance continued implementation by the ADEM Mobile Field Office through close local-area coordination of ACAMP (as updated) and all coastal NPS pollution programs relative to integration with the statewide NPS Management Program and Section 319 grant program as administered by the ADEM Montgomery NPS Unit.

The Alabama Coastal Nonpoint Pollution Control Program (CNPCP) continues plan and implement strategies to expeditiously achieve program approval relative to Alabama's remaining recommended actions as presented in the EPA/NOAA - Joint Interim Decision Document (2004). The state continues to submit "category-specific" products to gain final approval for each component as well as the overall program. Listings and summaries of many other and varied activities (e.g. handbooks, studies, project implementation) that have successfully gained and maintained programmatic approval (including marinas, forestry, and administrative coordination) are available from the ADEM Coastal Programs office in Mobile. Current and future (2014 - 2018) planning and implementation action projects partnering opportunities, and projected timelines are presented in **Table 7.5.2**, below.

Table 7.5.2 ACNPCP Response Strategy Relative to the NOAA/EPA Joint Interim Decision Document

Category	Projects	Projected Timeline
Agriculture	Categorical Submission (Holistic approach)	Oct 2014
Urban (A) New Development and Site Development	• Develop and submit a Coastal Alabama Urban Development Technical Update Report to NOAA/EPA. Identify urban development (UD) trends and prioritize by Hydrologic Unit Codes (HUCs). Update coverage information relative to MS4 permits in the report. • Comprehensive Planning: Address urban areas with funded plans. Ensure plans are in compliance with CNPCP management measures.	TBD
Urban (B) Watershed Protection and Existing Development	• Submit an updated Coastal Alabama River Basin Plan (2004) to NOAA/EPA. Include prior and current subwatershed management plans developed for implementation within the Management Area. Describe site and new development monitoring and tracking processes. • Develop Coastal Alabama Urban Development Technical Update Report. Identify trends and prioritize HUCs by UD. Update coverage information relative to MS4 permits. • Comprehensive Planning: Address urban areas with funded plans. Ensure plans are in compliance with CNPCP management measures.	TBD
Urban (C) New and Operating Onsite Septage and Disposal System (OSDS)	• Continue to implement the Coastal Alabama OSDS Inspection Program. Target prioritized OSDS sectors on a rotational pumpout and inspection basis. Integrate ADPH technical assistance in each sector. • Submit a rationale behind Coastal Alabama OSDS Inspection Program. • Prepare and present OSDS submissions to NOAA/EPA. • ADEM partners with ADCNR to promote denitrifying OSDS systems in nitrogen sensitive waters.	In progress (2014-2015) 2018
Hydromodification	• Submit an updated Coastal Alabama River Basin Plan (2004) to NOAA/EPA. • Comprehensive Planning: Address urban areas with funded plans. Ensure plans are in compliance with CNPCP management measures. • Develop and present Hydromodification submissions to NOAA/EPA	In progress for Oct 2016
Wetlands, Riparian Areas and Vegetated Treatment Systems	• Submit an updated Coastal Alabama River Basin Plan (2004) to NOAA/EPA. • Comprehensive Planning: Address urban areas with funded plans. Ensure plans are in compliance with CNPCP management measures. • Prepare and present Wetlands and Riparian submissions to NOAA/EPA.	In progress for Oct 2015
Monitoring and Tracking	• Continue to develop, expand and implement a more comprehensive Alabama Coastal Waters Monitoring Program (2011), including but not limited to Section 303(d) monitoring, trend studies, coastal ALAMAP surveys, and the Alabama Wetlands	Oct 2017

	Condition Assessment Project (2011). • Prepare and present Monitoring and Tracking submissions to NOAA/EPA.	

Alabama has submitted a NOAA/EPA acceptable ACNPCP legal opinion; however, for the management measures noted above, the state continues to work to provide links between implementation and enforcement and how management measures are monitored and tracked.

Section 7.6 Clean Water State Revolving Fund (SRF)

The Alabama NPS Management Program continues to leverage Safe Drinking Water Act programs, authorities, and funding sources to protect sources of drinking water from NPS pollution. In order to enhance NPS and groundwater /source water protection program coordination, effectiveness and efficiencies, this document endorses relevant NPS protection strategies expressed by ADEMs comprehensive state ground water protection program and source water protection program. In lieu of awarding separate grants under CWA Section 319(i), the EPA targets applicable NPS pollution mitigation groundwater activities though resources under Section 319(h). The intent is to:

- Encourage integration of the ADEM Groundwater Program and Drinking Water Program (including the Wellhead Protection Program) with the overall Alabama NPS Management Program
- Maximize flexibility in targeting limited federal and state resources for prioritizing and mitigating the causes and impacts of nonpoint sources on groundwater sources and water quality

Section 319 funds will continue to target source water protection projects for both surface water and groundwaters consistent with provisions of Section 319 grant guidelines. To that end, assessment reports and delineations, protection plans, technical assistance, technology transfer, drinking water program violation data, as well efforts to sustain source water protection partnerships continue to be coordinated and leveraged to provide source water data and information to:

- Support the development and implementation of NPS watershed-based management plans
- Link and enhance multi-disciplinary programs and authorities and leveraging of funds to protect drinking water sources from nonpoint sources of pollution
- Improve the efficacy of surface and groundwater protection program efforts (point and nonpoint sources)

Source water assessment and protection plans are inextricably linked to applicable NPS programmatic goals and objectives. Statewide water quality and watershed health monitoring and assessment activities conducted by ADEM continues to provide data that can help the public evaluate whether NPS pollution poses human health risks or impairs or threatens surface and groundwaters resources. Data collection is science driven and coordinated multi-media education and outreach efforts help to ensure that the best data and information is collected and presented to the public. While monitoring data may be collected annually using an annual statewide monitoring strategy or other relatively shorter-term intervals; the collection of NPS data should continue to consider the effects that climate change may have on long-term surface water and groundwater quality and water quantity /availability and uses.

The Alabama NPS Management Program and Section 319 NPS grant program share common goals with the State's source water protection programs under the Safe Drinking Water Act by continuing to seek opportunities to leverage the resources of the Drinking Water State Revolving Fund (DWSRF) and the Clean Water State Revolving Fund (CWSRF) as administered by ADEM. Nonpoint source projects (e.g. low impact development; green infrastructure, etc.) that also target source water protection are presented in revolving loan Intended Use Plans. Stakeholders are strongly encouraged to work with the ADEM Source Water Contact to apply for and leverage SRF loan funds for NPS pollution control purposes.

To enhance source water plan development and implementation, a MyWATERS Mapper has been developed to provide information about the density of drinking water intakes and wellheads at the 12-digit HUC level. In addition, the Nitrogen and Phosphorus Pollution Data Access Tool (NPDAT) can provide planners and others with modeling estimates of nitrogen loading.

Section 7.7 Memorandums of Agreement (MOA) / Memorandums of Understanding (MOU)

The Alabama Department of Environmental Management has established substantive agreements between various federal and state agencies and/or private sector entities. These documents contain measures and principles to

effectively and efficiently design, implement, and maintain mutually beneficial NPS programmatic and project-level goals and objectives. The number and extent of memorandums between agencies, academic institutions, and other organizations illustrates the high level of cooperation, collaboration, coordination, and communication that is on-going in Alabama. A summary of MOAs / MOU relative to the AL NPS Management Program and Section 319 project water quality protection and restoration goals and objectives are presented in Appendix F.8. Table F.8.

The Memorandums identify and encourage the use of existing NPS authorities and programs to help achieve AL NPS Management Program goals and objectives. The overall strategy is to prevent unnecessary duplication of efforts and to accelerate implementation of best management measures and practices. Memorandums target various types of BMPs for which Federal, state and local resource agencies and governmental entities already have authorities, standards and specifications in-place. When implemented and properly maintained, these mutually agreed-upon measures and practices will ensure that NPS pollutant load reductions are achieved and water quality is adequately and expeditiously protected and restored as resources allow. As the AL NPS Management Program continues to evolve, additional MOA/MOU opportunities are expected to be identified and partnerships initiated.

Chapter 8: Goals, Objectives, Strategies and Milestones

a) Overview

This Chapter presents *programmatic* performance and accountability measures the Alabama Nonpoint Source Management Program and the CWA Section 319 grant program will apply to mitigate nonpoint sources of pollution in Alabama for fiscal years **2014, 2015, 2016, 2017, and 2018**.

The AL NPS Management Program continues to use a flexible, targeted, and iterative implementation approach to:

- Strategically leverage and integrate a variety of planning and priority-setting programs to expeditiously achieve state water quality standards
- Effectively and efficiently articulate programmatic activities to the public and private sectors
- Ensure that technical support, incentives, and other resources are directed in a fiscally responsible manner
- Support programs and projects that address impaired water quality on a watershed basis as practicable
- Develop and implement holistic watershed-based management plans and Section 319 funded project workplans that reflect actions to advance the goals, objectives, strategies and action items presented in "b" and "c" below
- Balance broad scope and scale statewide, coastal, and major river basin NPS management priorities and resources with subwatershed and community-level water quality protection and restoration actions
- Track incremental progress in meeting goals and objectives and report incremental and final outcomes

b) Programmatic Goals, Objectives and Annual Milestones Defined

Periodic updates of Programmatic Goals and Objectives (*minimum every 5-years*) and Milestones (*Annually*) enhance opportunities for stakeholders to better define and revise NPS pollution management measures and indicators, evaluate progress and success; and strengthen communication, coordination, cooperation, and collaboration. The ADEM continues to promote opportunities for public input and participation relative to strategic program planning and implementation. Statewide NPS Management Program planning, implementation, and success measure targets in this document are defined as:

Goals: Longer-term (>5^{+} year) Goals are broad, highest priority guiding principles. They articulate overall purpose and direction to ensure implementation of an effective, targeted and relevant approach to NPS pollution management. Programmatic Goals are directly linked to the comprehensive Vision statement. Reasonable progress in meeting Goals is evaluated though Annual Reports.

Objectives: Shorter-term (annual) and longer-term (2-5 year) Objectives are targeted activities and services designed to accomplish long-term Programmatic Goals as expeditiously as possible. Reasonable progress in meeting Programmatic Objectives is evaluated though reporting of Annual Milestones.

Annual Milestones: Milestones are program outcomes or work products that are used to assess Annual progress in meeting Programmatic Objectives as expeditiously as possible. Since the Alabama NPS Management Program is a long-term planning document, programmatic Annual Milestones

are more general than those expressed in an annual Section 319 grant workplan; but allows the state's designated NPS pollution management agency (ADEM) and the EPA to determine satisfactory progress in accordance with CWA Section 319(h)(8) and Section 319(b)(2)(C).

c) Strategies and Action Items

Strategies and Action Items are fundamental building blocks designed to directly and expeditiously achieve program and project-level goals, objectives and annual milestones. They provide ample "on-the-ground" and "hands-on" options to achieve ultimately desired environmentally-protective and economically-sensible water quality-based outcomes. Their application to site-specific issues support NPS program institutionalization i.e., *local stakeholders take local responsibility for resolving local problems using local resources to locally plan and implement local solutions.* The ADEM continues to invite public comments and suggestion to refine "local" strategic and actionable efforts, as the terms are defined below:

Strategies: Key foundational programmatic and project-level implementation activities designed to address requirements of CWA Section 319(h)(11) and EPA Section 319 nonpoint source guidelines.

Action Items: Basic activities that are used to identify, plan, prioritize, and implement Project-level strategies. Action items may be statewide or local, and site or pollutant-specific; but always link to Strategies.

The following Programmatic Goals and Objectives will ensure that Alabama citizens are safeguarded from significant nonpoint source pollution risks where they live, work, visit, or recreate. These Goals and Objectives provide a coherent clear and consistent framework for achieving the AL NPS Management Program Vision Statement. The Vision Statement aligns with the objective of the Clean Water Act, "…*to restore and maintain the chemical, physical, and biological integrity of the nation's waters*."

Section 8.1	**Goal 1 and Objective 1.x**
Long-term Goal 1:	**Continue To Collect Surface Water and Groundwater Monitoring Data Using an Iterative Statewide Targeted Monitoring Approach to Assess Whether State Waters Meet** State Water Quality Standards **and Use Classifications.** (Timeline: Replicate as a finite component of annual ADEM monitoring plan design, objectives, and indicators in coordination with the Section 319 grant program).
Long-term Objective 1	Continue to collect WQ monitoring data to characterize the chemical, physical, and biological conditions of subwatersheds in a priority major river basin and to help evaluate whether waters fully or partially meet state water quality standards and water use classifications. (Indeterminate Timeline: Replicate as an Annual component of annual ADEM monitoring plan design, objective, and indicator strategies).
Short-term Objective 1.1	Continue to collect WQ data to identify, list and categorize NPS threats and impacts to surface waters and groundwaters of the state in the latest CWA Section 305(b) / Integrated Water Quality Monitoring and Assessment Report. (Biennial CWA Section 305(b) Report; Replicate as a continuing component of annual ADEM monitoring plan design, objective, and indicator strategies).
Short-term Objective 1.2	Continue to collect WQ assessment and monitoring data from a priority CWA Section 303(d) listed HUC-12 subwatershed to support the development or implementation of a watershed-based management plan that incorporates Section 319 grant guideline 9-Key watershed-based plan elements. (Annual)
Short-term Objective 1.3	Continue to collect Section 319 grant-funded watershed project WQ data to track restoration progress and successes (e.g. achieve priority TMDL and Section 319 pollutant load reductions; meeting state water quality standards, etc).

(Annual)

Short-term Objective 1.4 Target and leverage Section 319 and other public and private funds and resources to gain NOAA/EPA final program approval of the Alabama Coastal Nonpoint Pollution Control Program (including meeting and sustaining implementation of Interim Decision Document recommendations) relative to Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 .
(Annual)

Short-term Objective 1.5 Continue to partner with USDA-NRCS to monitor priority National Water Quality Initiative watersheds to help document pre- and post- conservation practice implementation effectiveness.
(Annual)

Section 8.1.1 Programmatic Strategies to Achieve Goal 1

a) Collect water quality monitoring data in accordance with applicable NPS components of the Clean Water Act and the Alabama Water Pollution Control Act to incrementally restore waters of the state and meet water quality standards.

b) Coordinate and leverage Section 319 grant resources with other relevant federal and state NPS water quality monitoring and assessment programs, processes, and priorities, including:

- Alabama Water Agencies Working Group - Water Management Issues in Alabama (Aug 1, 2012 report, as updated)
- CWA Section 303(d) List of Impaired Waters (The primary focus for Section 319 grant watershed project funds)
- CWA Section 304(b) Integrated Report to Congress (biennial)
- EPA/ADEM Performance Partnership Grant (PPG) (Catalog of Federal Assistance Number 66.605)
- EPA - Strategic Plan (FY2014 - 2018)
- EPA - Healthy Watersheds Initiative
- EPA - National Estuary Program (Mobile Bay)
- EPA - Gulf of Mexico Program
- EPA / Gulf States - Gulf of Mexico Alliance
- NOAA and EPA: Section 6217 Coastal Zone Act Reauthorization Amendments (CZARA) and the ADEM Coastal Programs
- USDA/NRCS - National Water Quality Initiative (NWQI)
- TVA (water, land, resource planning, environmental policy, etc)
- USGS (water resources)
- USFWS (Strategic Habitat Unit ; Northern Gulf Coast Program, etc)
- GSA and State Oil and Gas Board (surface waters, groundwaters, ecosystems, energy, etc)
- ADCNR (natural resource management)

c) Continue to assess, monitor and report watershed health and water quality conditions using strategic and scientifically-valid practices, standards, and approaches based upon an EPA acceptable and ADEM equivalent Quality Assurance / Quality Control (QA/QC) and Quality Assurance Project Plan (QAPP).

- State of Alabama Water Quality Monitoring Strategy (ADEM. June 19, 2012, as updated)
- Alabama's Water Quality Assessment and Listing Methodology (January 2012, as revised)
- State of Alabama Continuing Planning Process: Alabama Department of Environmental Management (September 2002, as revised)
- ADEM Water Quality Reports

d) Continue to leverage public and private sector surface and groundwater / drinking water resource assessment efforts to mutually and concurrently achieve NPS programmatic and project-specific goals and objectives:

- Enhance application, as appropriate, of state water quality standards, water use classifications, and regulatory tools to safeguard watershed and human health (e.g. beach, recreation area, and fish/shellfish impacts, warnings and advisories; protect unimpaired, outstanding and high quality waters; restore impaired waters).
- Deliver timely and scientifically-valid data to enhance the public's understanding of complex ecological systems (e.g., intertwined relationships of the causes of NPS pollution, water quality impacts, and natural resource protection and restoration, etc.).
- Enhance and coordinate the varied federal, state and local community entities assessing and reporting coastal zone water conditions and characteristics (e.g., beaches, wetlands, estuaries, aquatic habitat, fish and shellfish health and advisories, energy production, etc.)
- Enhance the development and incorporate faster and more accurate data collection and analyses tools that corresponds with increasingly rapid human and environmental health protection and public safety actions
- Update or adopt new or improved water quality monitoring and assessment methodologies and technologies.

e) Continue to use and leverage Section 319 grant funding as an integral component of state and interstate water quality monitoring and assessment efforts:

- Strategically focus project-specific goals and objectives to expeditiously achieve state water quality standards for priority impaired waters and watersheds (e.g., Section 303(d) lists, Section 305(b) Integrated Reports, USDA-NRCS National Water Quality Initiative)
- Leverage and integrate public and private sector programs, processes and activities by aligning planning, priority-setting and resources to make the best use of limited human and financial capital (i.e. NPS program administrative and fiscal accountability)

- Develop and implement the monitoring components of annual Section 319 (or EPA-approved alternative) watershed-based management plans and project workplans to advance applicable AL NPS Management Program water quality protection and restoration goals and objectives
- Track and report water quality assessment results to help document NPS programmatic and project-specific incremental progress and measures of success, priority NPS or mixed-source TMDLs pollutant load reduction trends and analysis, watershed-based management plan status, BMP implementation and maintenance effectiveness; etc.)
- Support integrated national or regional frameworks that address broad-scale NPS pollution challenges (e.g. mercury deposition)
- Develop new or improved protocols, analyses methods, quality assurance and quality control processes, and standardized procedures to help ensure delivery of valid environmental data and information (i.e. to get the "best bang for the NPS assessment buck")
- Evaluate the restoration of NPS-impaired waters following the implementation of best management practices (e.g. effectiveness in protecting and restoring water quality, aquatic habitat, and socio-economic/quality-of-life benefits)
- Collect land use/water quality impacts data, preferably based upon on the 12-digit Hydrologic Accounting Unit (HUC) hierarchical system, to better inform the public of NPS problems, develop and implement watershed-based management plans, and protecting and restoring water quality and natural resources
- Reflect a balance between planning, staffing, and statewide actions to best deliver useful and valid environmental monitoring and assessment data and program implementation results
- Identify the causes of NPS pollution to meet and maintain beneficial uses
- Characterize NPS pollution causes, sources, and loadings to waters of the state in order to mitigate threats and impacts to watershed and water quality and public health and safety using a mix of voluntary and regulatory actions
- Continue to articulate Section 319 grant and project-specific goals and objectives to the public using science-based monitoring data

f) Continue to support strong, statewide coalition of volunteer water quality monitoring and assessment programs and partnerships:
- Provide assistance to sustain public interest and commitment, provide opportunities for input, and facilitate/empower stakeholders in NPS monitoring decision-making processes
- Collect and evaluate water quality data and information to assist in the development and implementation of the 9-key elements of watershed-based management plans
- Continue to articulate Section 319 grant and project-specific goals and objectives to the public using valid volunteer monitoring data
- Collect water quality data to help the public and private sectors:
  - ✓ Evaluate long-term trends in water quality degradation or improvement
  - ✓ Target local community-based actions to restore impaired waters and protect unpaired and high quality waters

Section 8.1.2 Water Quality-Based Strategies Geared Towards Goal 1

Overview: The ADEM continues to partner with a mix of public and private sector entities to collect and report scientifically-valid water quality data as practicable, and as human and financial resources allow. Monitoring data collection helps stakeholders ascertain whether a watershed or waterbody meets state water quality standards, water use classifications or other beneficial uses. Communication, collaboration, coordination, and cooperation are foundational building blocks upon which AL NPS Management Program and Section 319 grant program monitoring and assessment activities are implemented. Water quality monitoring activities that do *not* target nonpoint sources of pollution; whose data is not applicable to the development and implementation the NPS components of a watershed-based management plan or TMDL; nor assesses the impact of BMPs on water quality restoration, may *not* be supported with CWA Section 319 grant nonpoint source program funds nor watershed project funds.

Strategies presented by Goal 1 support water quality accountability requirements applicable to the annual EPA/ADEM Performance Partnership Grant (PPG) agreement. The ADEM uses a PPG to incorporate multi-program grants into a single EPA Assistance Grant Program grant award. This approach is designed to reduce administrative costs, streamline paperwork and accounting, provide financial flexibility, and supports cross-media approaches and initiatives in accordance with EPA 40 CFR Part 35 rules.

Goal 1 Water Quality Monitoring and Assessment Activities:

a) Fulfills the CWA Section 319(h)(11) obligation to publically report the following NPS programmatic progress measures:
- ➢ Milestones (*Annually*)
- ➢ Reductions in NPS Pollutant Loadings (*Annually*)
- ➢ Improvements in Water Quality (*Annually*)

b) Integrates the CWA Section 319 grant program with a combination of other ADEM NPS pollution management programs and projects:
- Partnering with relevant state and federal programs best suited to achieve and maintain state water quality standards.
- Achieves NPS water quality improvement results through a combination of priority watershed-specific restoration approaches and statewide/coastal zone management programs and processes including volunteer activities and regulatory authorities, as appropriate.
- Emphasizes a holistic watershed-based management approach to achieve state water quality protection and restoration results

c) Addresses applicable components of EPA FY2013 National Water Program: Strategic Plan and Guidance (as updated) and, NWPG Measure Codes presented in **Table 8.1**, below:

TABLE 8.1 Applicable NPS National Water Program Guidance (NWPG) Measure Codes (2013)

•	WQ-SP12.N11:	Improvements in water quality conditions attained in impaired watersheds using the watershed approach.
•	WQ-09 (a, b, c):	(a) Estimated annual reduction in million pounds of nitrogen from nonpoint sources to waterbodies (Section 319 funded projects only). (b) Estimated annual reduction in million pounds of phosphorus from nonpoint sources to waterbodies (Section 319 funded projects only). (c) Estimated annual reduction in tons of sediment from nonpoint sources to waterbodies

		(Section 319 funded projects only).
•	WQ-10:	Number of waterbodies identified by the State (in 2000 or subsequent years) as being primarily NPS impaired that are partially or fully restored (cumulative). Under some circumstances, a WQ-10 waterbody may be included within a HUC-12 digit watershed for reporting under WQ-SP12.N11 (watershed improvement).

d) Scientifically-valid data and information collected by or presented to ADEM will be made publically available via:

- CWA 305(b) Integrated Water Quality Monitoring and Assessment Reports (IR) *(Biennial)*
- EPA/ADEM Performance Partnership Grant (PPG) Reports: (*Annual*)
- Nonpoint Source Management Program Annual Reports (*Annual)*
- EPA Watershed Assessment, Tracking and Environmental Result Information System (WATERS) database (A*nnual)*
- Consolidated Assessment and Listing Methodology (CALM) reports (i.e., Section 305(b) and Section 303(d) processes *(Biennial)*
- EPAs Storage and Retrieval Data Warehouse (STORET) and Water Quality Exchange (WQX) (*Annual*)
- Other public and private sector reporting and listing approaches and systems (*Annual grant and/or project-specific contractual timelines).*

Section 8.2 **Goal 2 and Objective 2.x**

Goal 2 **Target AL NPS Management Program Resources to Restore, Protect, and Maintain Beneficial Uses of Waters of the State**

Long-term Objective 2	Continue to implement NPS management measures and practices to help ensure the public of clean and safe waters in accordance with the following authorities: • Clean Water Act - Section 319 • Alabama Environmental Regulations and Laws • Other relevant federal and state agency laws, rules, regulations, ordinances, policies, guidelines, and program administrative responsibilities. (Annual)
Short-term Objective 2.1	Continue to develop and implement applicable NPS components of 9-key element watershed plans; with or without a commitment of Section 319 grant program funding. (Annual)
Short-term Objective 2.2	Continue to leverage public and private sector resources to implement NPS management measures and practices to restore Section 303(d) impaired listed waters per a Total Maximum Daily Load (TMDL) and to protect Outstanding National Resource Waters, Treasured Alabama Lakes, and public water supply waters (Annual) identified in Section 305(b) Integrated Reports (Biennial).
Short-term Objective 2.3	Continue to leverage Section 319 grant resources to achieve priority FY2014 and future years grant guidelines (i.e., nitrogen, phosphorus, and sediment) and TMDL pollutant of concern load reductions. (Annual)
Short-term Objective 2.4	Continue to place strong emphases on restoring HUC-12 delineated watersheds by facilitating and leveraging funding, BMP implementation, education and outreach, technology transfer, technical assistance or pollution prevention resources. [(7)] (Annual)

Section 8.2.1 Programmatic Strategies to Achieve Goal 2 and Objective 2

a) Continue to enhance and preserve watershed, water quality and aquatic habitat / ecosystem health:

- Leverage Section 319 resources to increase listings of special designated use waters (e.g., Outstanding Alabama Waters, Outstanding National Resource Waters, and Treasured Alabama Lake)
- Target public and private sector resources to restore impaired waters, prevent further degradation, and protect high quality and unimpaired waters
- Develop, revise, or promulgate new or revise state rules and regulations associated with state water quality standards or water use classification criteria and descriptions to enhance NPS management program implementation efficiency and effectiveness
- Target NPS mitigation resources to address waters identified in the CWA Section 305(b) Integrated Report or on CWA Section 303(d) Lists of Impaired Waters (for Section 319 grant purpose use the 2006 list as a base line
- Restore water quality using a targeted, iterative, holistic watershed-based management approach
- Leverage Clean Water State Revolving Fund (CWSRF) and other state and federal NPS project resources to fund water quality protection projects and/or to achieve or go well beyond the required minimum non-federal match (40%) level for Section 319 grants
- Leverage Section 319 grant resources to implement the NPS components of EPA-approved Total Daily Maximum Loads
- Coordinate the Alabama NPS Management Program with federal and state environmental planning processes and programs:

- State of Alabama Continuing Planning Process (ADEM Sept. 2002, and as updated/revised)
- CWA Section 303(e)
- EPA Regulations at 40 CFR S. 130.5

- Target priority NPS impaired waters identified in Appendix C of the state's biennial Section 305(b) Integrated Report
- Continue to identify wetland acreages, functions, and quality per the ADEM Wetland Program Plan (08/28/2011, as updated)
- Promote and facilitate a sustained Wetland Waters Workgroup/Team/Partnership to identify, protect, restore wetland resources statewide and to help gain/sustain approval of the Coastal Wetlands Category of the Alabama Coastal Nonpoint Pollution Control Program
- Preserve and protect high quality aquatic resources by conserving and improving ambient water quality and habitat conditions
- Report on AL NPS Management Program implementation progress in accordance with CWA Section 319(h) (11)

b) Continue to develop and implement applicable NPS components of an EPA 9-key element watershed management plan to help restore impaired waters and achieve state water quality standards:

- Annually develop or implement at least one watershed-based management plan that incorporates as applicable, EPAs 9-key watershed-based management plan elements:
  - ✓ To target waters impaired by nonpoint sources or a mix of point/nonpoint sources
  - ✓ For which a nonpoint source TMDL has been approved by EPA
  - ✓ To enhance mitigation efforts of an EPA acceptable alternative NPS / water quality protection/restoration plan developed or implemented with or without a commitment of Section 319 grant funding and resources.
- Target waterbodies that do not meet state water quality standards (e.g., Section 303(d) Lists of Impaired Waters):
  - ✓ Achieve priority Section 319 grant guideline (e.g., N, P, and sediment) and TMDL pollutant(s) of concern load reductions
- Target Section 319 funds to protect unimpaired and high quality waters of the state only after consultation with EPA and approval of an *Annual* Section 319 grant workplan.
- Prioritize waters for watershed-based management plan development in cooperation with federal, state, and local partners in order to abate or reduce NPS pollutant loadings:
  - ✓ Leverage public and private funds and resources to plan and install environmentally-protective and fiscally-responsible nonpoint source management measures and practices (e.g. preferably targeting HUC-12 subwatersheds)
  - ✓ Plan for and implement appropriate NPS technologies, technical assistance and education and outreach to a mix of audiences
  - ✓ Upgrade or retrofit NPS management measures that continues to contribute excess NPS pollution runoff and water quality degradation
  - ✓ Publicly promote water quality benefits and potential cost savings associated with protecting high quality waters
  - ✓ Target human and financial capital to prevent future impairments to waters that currently meet water quality standards but whose condition is threatened and likely to decline.
- Submit an annual Section 319 watershed project success story to EPA with water quality improvements based upon science-based and quality assured data and information

c) Continue to expand the science of water quality data collection, analyses and reporting to determine if state waters are meeting state water quality standards and designated water use classifications:

- Develop, assess, and integrate relevant water quality laws, rules, and standards to provide a firm foundation upon which environmental protection and human health criteria and safeguards are established (e.g., advisories for recreation/body contact, fish/shellfish consumption, drinking water sources, etc.).
- Improve the way existing watershed-based management decision tools and models are designed or used to protect and restore surface waters and groundwater resources (e.g., coastal zone, estuary, wetland, recreational, drinking, etc.).
- Review, promulgate and establish water quality monitoring standards, criteria and analyses methods that enable quicker results and safety actions relative to human body contact and fish and shellfish consumption advisories.
- Investigate and develop new, improved, or innovative environmental data collection, analyses, and interpretation methods and incorporate into current protocols as expeditiously and practical as resources allow
- Enhance opportunities for cross-media collaboration and resource leveraging (land, air, and water pollution controls)
- Focus Section 319 grant funds on nonpoint sources of nutrient and sediment runoff that threaten watershed and ecosystem health
- Assess maximum and minimum allowable pollutant concentrations relevant to beneficial uses (e.g. fishing, swimming, and drinking), compliance with the state's Antidegradation Policy, protection of aquatic life and habitat, etc.
- Justify the use of limited monitoring and assessment resources and actions to improve water quality
- Assess water quality trends by using consistent and scientifically-valid methods to monitor biological, physical, chemical parameters and aquatic habitat conditions
- Collect data as an environmental health "screening tool" to provide early notice of potential NPS pollution problems and needed management measure implementation actions.

d) Continue to address regional, interstate (cross state-line) and other complex NPS pollution issues and challenges by:

- Partnering with other state agency resource agencies and the private sector to restore and protect waters from pollutants that originate or impact across political boundaries.
- Targeting interstate surface waters and groundwater resources and aquatic ecosystems in priority geographic areas (e.g., Section 303(d) Lists of Impaired Waters or Section 305(b) Integrated Reports

e) Continue to implement BMPs to protect and restore Coastal Zone aquatic ecosystems, beach and recreational areas, fish and shellfish resources, estuaries and wetlands from NPS pollution threats and impacts and other environmental and socio-economic challenges:

- Target priority waters identified as impaired by ADEM on CWA Section 303(d) Lists; Section 305(b) Integrated Report; and as Section 6217 / Alabama Coastal Area Management Program watershed and water quality protection and restoration priorities

- Partner with federal and state agencies and private groups, as applicable and practical, to take necessary management actions that support coastal zone efforts to restore the Gulf of Mexico ecosystem
- Leverage federal, state, and local human and financial capital to restore coastal zone waters, estuaries, wetlands, beaches, streams, and local communities, including but not limited to resources through Gulf of Mexico Alliance and the EPA - National Estuary Program (Mobile Bay) partners.
- Partner and coordinate with state and interstate entities involved with the planning and implementation of applicable NPS pollution mitigation solutions associated with the Deepwater Horizon BP oil spill.
- Continue to gather the best water quality data and information to respond and adapt to potential impacts of climate change on Alabama's aquatic resources (e.g., warming temperatures, changes in rainfall amount and intensity, sea level rise, etc):

f) Continue to monitor, identify, and prioritize NPS management activities to protect unimpaired waters:
- Target watersheds or portions of watersheds with unique, valuable, or threatened species or critical habitats including but not limited to Endangered and Threatened Species in Alabama (ADCNR), Alabama Comprehensive Wildlife Conservation Strategy (ADCNR), and/or species and habitat protection priorities of the U.S. Fish and Wildlife Service.
- Target Groundwaters that serve as a drinking source water / public drinking water supply resource:
  - ✓ High quality waters in watersheds that contain some impairments
  - ✓ Waters near geographic areas where rapid land use development is occurring
  - ✓ Waters where data trends indicate water quality degradation is occurring
  - ✓ Restored waters requiring continued water quality assessment and maintenance of BMPs to assure unimpaired status
  - ✓ Watersheds contributing high nutrient loads to downstream waters
- High quality use classifications including Outstanding Alabama Waters, Outstanding Natural Resource Waters, and Treasured Alabama Lake:
- Target Section 319 grant funds to develop or implement strategies and metrics aimed at assessing and protecting unimpaired waters.
- Focus public and private sector resources to implement watershed-based management plans to comprehensively address both impaired and unimpaired segments within a priority watershed (preferably on a HUC-12 scale)
- Focus resources where to assure that existing unimpaired or high quality waters do not become impaired and to address potential NPS pollutant loading threats and conditions that may contribute to future impairments downstream.
- Develop and implement watershed-based (or alternative plans) to restore unimpaired waters as discussed in the EPA, *Handbook for Developing Watershed Plans to Restore and Protect our Waters*

Section 8.2.2 Strategies Geared Towards Watershed and Water Quality Protection and Restoration

Overview: The ADEM will continue to partner with the public and private sectors to expeditiously meet state water quality standards. Goal 2 is designed to help the public ascertain whether the flexible, targeted and iterative NPS watershed management approach is successfully and expeditiously protecting and restoring state water quality (e.g. impaired waters meet state meet water quality standards, classifications, and beneficial uses). Communication, collaboration, coordination, and cooperation provide the foundation upon which AL NPS Management Program and Section 319 grant program incremental progress and overall success is achieved and sustained.

Goal 2 provides annual program evaluation and accountability information for ADEMs water quality and Section 319 grant programs in relation to an annual EPA/ADEM Performance Partnership Grant (PPG) agreement. The ADEM uses a PPG to incorporate multi-program grants into a single EPA Assistance Grant Program grant award to reduce administrative cost, streamline paperwork and accounting, provide resource targeting flexibility, and support cross-media approaches and initiatives in accordance with EPAs 40 CFR Part 35 rules.

a) Performance and Progress Measures are Tracked and Presented to the Public using:
- Alabama NPS Management Program Annual Reports (*Annual*)
- EPAs national Grants Reporting and Tracking System (GRTS) database (*Annual*)
- Water Quality Reports (ADEM rivers, reservoir, and stream monitoring summaries)
- EPA Watershed Assessment, Tracking and Environmental Results (WATERS) Information System database (A*nnual)*
- CWA 305(b) Integrated Water Quality Monitoring and Assessment Reports (IR) *(ADEM, Biennial)*
- Consolidated Assessment and Listing Methodology (CALM) Reports/Listings (i.e., Section 305(b) and Section 303(d) processes *(EPA, Biennial)*
- Public and private sector institutional-based and project-specific documents, reporting systems/databases, and websites (*per project-specific and contractual agreement timelines)*

b) The CWA Section 319(h)(11) obligation to publically report the following three NPS programmatic measures is fulfilled by achieving:
- ➢ Milestones (*Annual*)
- ➢ Reductions in priority NPS Pollutant Loadings (*Annual*)
- ➢ Improvements in statewide Water Quality (*Annual*)

c) The Section 319 grant program is *Annually* integrated with a combination of ADEM statewide programs and on-the-ground projects:
- Partnerships are used to leverage relevant state and federal programs and resources best suited to meet state water quality standards.
- A combination of voluntary actions and regulatory authorities are used, as appropriate, to ensure waters meet state water quality standards
- The implementation of a holistic watershed-based management approach and the development and implementation of watershed-based management plans is continually emphasized to expeditiously protect and restore water quality

d) The Alabama NPS Management Program is integrated with and designed to help achieve NPS priorities of the following EPA initiatives (*Annually*):
- National Water Program: Strategic Plan and Guidance (NWPG) (FY2013 and future years)

- NWPG (Appendix A - Measures Summary)

e) Alabama citizens are assured of clean and safe state waters in accordance with the following:
- Clean Water Act
- Alabama Water Pollution Control Act
- Other relevant NPS pollution management federal and state laws, rules, regulations, policies, guidelines or local community ordinances

g) Section 319 grant funds are *Annually* leveraged with public and private sector resources with the intention of developing and delivering mutually beneficial nonpoint source education and outreach (E&O) programs, services and products:
- Agencies, the academic community, consultants, groups and organizations, and other entities partner together to evaluate E&O and audience needs and implementation successes (e.g. mutually develop, collect, and share services, materials, resources, processes)
- Collaboration, coordination, cooperation and communication is enhanced (e.g. enhances staff, funding, tools, equipment, practices, programs, and technology and resource accountability)
- Specific or general state-wide, watershed, or subwatershed level E&O products are efficient and effectively targeted and delivered (e.g. improves timeliness and increases public awareness, knowledge, skills, participation, and project "buy-in," etc.),
- Anthropogenic perturbations to watersheds and ecosystems may be addressed holistically (e.g., pollutant loadings, invasive species, climate change/greenhouse gas emissions, land use changes, aquatic species/habitat degradation, etc.)
- The connection between NPS pollution, watershed health, and water quality protection and restoration is presented using voluntary and regulatory approaches to enhance citizen awareness and knowledge
- Economic benefits associated with implementation of a holistic watershed-based management approach is presented to the public relative to fishing, swimming, boating, hiking, birding; flooding issues, aquifer recharge zones and surface water sources protected, reduced drinking water treatment costs., etc.
- Publicize the environmental benefits for implementing a watershed-based management approach (e.g., identify and mitigate biological, chemical, and physical stressors)

h) At least one watershed-based management plan is developed or implemented that incorporates watershed-based restoration components of EPAs 9 key elements of a watershed plan (FY14 and future year Section 319 grant guidelines) (*Annual*).

i) Technical resources and other support are leveraged to develop and implement Total Maximum Daily Loads (e.g. enhances the targeting of human and financial capital, establish/sustain partnerships, develop monitoring metrics, measure progress and success, etc.)

j) Watershed protection or ecosystem management plans effectively and efficiently target:
- Unimpaired/high quality waters (e.g. Outstanding Alabama Waters, Outstanding Natural Resource Waters, and Treasured Alabama Lake)
- Watersheds or portions of watersheds with unique, valuable, or threatened species or critical aquatic habitats of these species
- Waters and watersheds (including ground waters where appropriate) that serve as a source water for a public drinking water supply
- Protection of high quality waters in watersheds that contain some impairments
- Waters near geographic areas where rapid land use development is occurring
- Waters where data trends indicate NPS water quality degradation is occurring (CWA S. 305(b) Reports)
- Restored waters requiring continued water quality assessment and maintenance of BMPs to assure unimpaired status
- Watersheds contributing high NPS nutrient loading to downstream waters (CWA S. 305(b) Reports)

Section 8.2.3 Strategies Geared Towards Section 319 Grant Watershed and Water Quality Restoration

a) Section 319 grant funding is used to develop or implement at least one (1) watershed-based management plan (or enhance an alternative watershed plan that directly addresses state NPS Programmatic Goals and Objectives and Request for Proposal priorities) *Annually.* As the information is available, plans incorporate EPAs 9-key watershed plan elements per Section 319 guidelines, and:
- Provide for structural and nonstructural NPS management measures and solutions, singularly or in combination
- Establish, enhance and leverages partnership resources to help ensure that waters of the state are safe for drinking, fishing, recreation, or other beneficial uses
- Implement practices to mitigate anthropogenic land-use activities that degrade state waters or prevent them from meeting state water quality standards
- Target applicable NPS goals or objectives of the Clean Water Act and the AL Water Pollution Control Act
- Facilitate watershed health and water quality protection and restoration activities to achieve the Goals, Objectives, and Annual Milestones of the AL NPS Management Program in accordance with EPAs Section 319 grant guidelines

Section 8.3 Goal 3 and Objective 3.x

Goal 3: Implement Nonpoint Source Management Measures and Practices to Restore and Protect Watershed Health and Water Quality

Long-term Objective 3.1 Continue to leverage public and private resources to implement measures and practices to restore and protect watersheds and water quality and human health from nonpoint sources of pollution (Sustain. Replicate Annually)

Short-term Objective 3.2 Implement BMPs in at least one HUC-12 subwatershed annually to restore watershed productivity and resilience; exclusive of or by leveraging Section 319 funding. (Annual)

Short-term Objective 3.3 Install or enhance the effectiveness of NPS pollution management measures (including retrofits) to protect, maintain and restore the ecological integrity of the state's rivers, lakes, streams, wetlands, estuarine, and other waters. (Annual)

Section 8.3.1 Programmatic Strategies to Achieve Goal 3 and Objective 3.x

a) Continue to partner with the public and private sectors to install a suite of NPS management measures designed to:

- Mitigate priority Section 319 grant guideline NPS pollutant load reductions (e.g. N, P, and sediment)
- Mitigate nonpoint source Total Maximum Daily Load (TMDL) priority pollutants (e.g., pathogens, nutrients, organic enrichment, (low) dissolved oxygen, siltation, turbidity, habitat alteration, pH, pesticides, metals, etc.)
- Enhance the development and implementation of watershed-based management plans
- Protect environmental and human health based upon local interests and land use data and information
- Ensure that NPS management decisions consider environmental justice ramifications
- Secure the state's ground and surface water resources from nonpoint sources
- Protect and restore aquatic ecosystems and habitats

b) Continue to leverage and integrate Section 319 grant funding in partnership with many and varied public and private sector programs, processes, systems, and designs to:

- Clearly articulate NPS programmatic goals, objectives, and milestones and develop annual project workplans that reflect environmentally-protective and fiscally-responsible actions to achieve them
- Strategically focus water quality protection and restoration resources to expeditiously maintain beneficial uses of state waters and achieve state water quality standards in priority waters and watersheds
- Reflect a balance between statewide, river basin, watershed and local planning, staffing that best utilizes water quality protection and restoration resources to deliver measurable water quality improvement results
- Align public and private sector plans and coordinate priority-setting initiatives to ensure the best use of NPS mitigation resources
- Integrate the AL NPS Management Program with national, regional, and interstate NPS pollution water quality priorities, issues, and challenges
- Track and publically report water quality improvements to validate NPS Management Program implementation progress and success

c) Continue to leverage resources and enhance opportunities for major NPS category and cross-media (air, land, water) collaboration using a watershed-based management approach to protect and restore water quality in both impaired and healthy watersheds:

- Address surface, ground, drinking source, and recreational water protection and restoration using a holistic NPS management approach as opposed to addressing threats and impairments on pollutant-by-pollutant basis.
- Establish statewide, watershed and community-level NPS pollution load-reduction targets
- Promulgate and enforce NPS pollution discharge laws, regulations, standards, or ordinances when the voluntary approach does not appear to be working

d) Continue to seek ways to efficiently, effectively and economically improve the way existing NPS management tools are administered:

- Explore how new and innovative designs, mechanisms and processes can be best applied to enhance current methodologies and technologies
- Investigate, develop, and incorporate ways to streamline NPS management and water quality monitoring and restoration decision-making processes
- Facilitate NPS mitigation planning, BMP implementation and education and outreach measures and practices to best meet both urban and rural community environmental and social-economic priorities, needs, wants, and expectations
- Use an iterative management approach to align and leverage an array of Clean Water Act resources with other federal, state, and local environmental protection and restoration resources

e) Continue to target implementation of best management practices to restore impaired waters and protect high quality or unimpaired waters in priority watersheds and key geographic areas including but not limited to:

- CWA Section 303(d) Lists / Total Maximum Daily Loads
- CWA Section 305(b) Integrated Reports
- Source Water Protection Assessments and Plans (Drinking Water and Groundwater)
- USFWS - Strategic Habitat Units
- USDA/NRCS - National Water Quality Initiative
- Clean Water State Revolving Fund
- National Estuary Program (Mobile Bay) / Comprehensive Conservation and Management Plan and NEP annual project workplans)
- Watershed-based management plans that address the nine (a -i) minimum elements identified in EPAs, "Handbook for Developing Watershed Plans to Restore and Protect our Waters," or other federal, state and local watershed-based planning documents that may be used to fulfill some or all of the Section 319 grant funded required "a - i" watershed-based plan elements.

f) Continue to target Section 319 grant and other federal and state resources to implement coastal nonpoint pollution control program management measures under Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 ("CZARA"):

- ADEM NPS program /Section 319 staff continues to work closely with the Alabama Coastal Nonpoint Pollution Control Program staff and other resource agencies to implement NPS management measures that concurrently and mutually benefits administration and management of the ADEM Coastal Program and the statewide AL NPS Management Program:
- Target at least $100,000 of the annual Section 319 grant award to ADEM to address NOAA-EPA interim decision document / conditional program approvals and to achieve NOAA-EPA final approval of the Alabama Coastal Nonpoint Pollution Control Program.

Section 8.3.2 Strategies Geared Towards Implementation of Best Management Practices

Overview: The ADEM plans and implements environmentally-protective and economically-sensible BMPs in partnership with many and varied public and private sector entities. These efforts help to meet state water quality standards, use classifications, and sustain beneficial uses of water. Communication, collaboration, coordination, and cooperation are important elements and provide the basic building blocks upon which NPS management measures and practices are planned and implemented and Section 319 grant funds are leveraged.

a) The ADEM continues to convey Goal 3 implementation progress:
- EPA/ADEM Performance Partnership Grant - Annual Reports (*Annual*)
- Alabama NPS Management Program Annual Reports (*Annual*)
- EPAs Grants Reporting and Tracking System (GRTS) database (*Annual*)
- Public and private sector databases and reporting systems as applicable to NPS management measure tracking and water quality improvement / lag times or project-specific and contractual timelines.

b) Fulfill the CWA Section 319(h)(11) obligation to publically report on the following three NPS program progress measures:
- Milestones (*Annually*)
- Reductions in NPS Pollutant Loadings (*Annually*)
- Improvements in Water Quality (*Annually*)

c) The Alabama NPS Management Program is integrated with applicable NPS components of EPA initiatives:
- National Water Program and Guidance (NWPG) (FY2013 and future years)
- NWPG Measure Codes - Appendix A (Fiscal Year 2013 and as updated)

d) Section 319 grant funding is used to develop or implement at least one watershed management plan *Annually* that incorporates EPAs 9-key watershed plan elements *(Annually)*:
- Structural and nonstructural management measures, singularly or in combination, are planned and using cooperative partnerships implemented to mitigate nonpoint sources of pollution to waters of the state.
- Partnership are established, enhanced, and sustained and NPS resources leveraged to help ensure that waters of the state are safe for aquatic life, and drinking, recreation or other beneficial uses.
- Management measures are implemented to mitigate anthropogenic perturbations that threaten or degrade waters of the state and prevent them from meeting state water quality standards.
- Watershed-based management measures target applicable NPS goals and objectives of the CWA and AL Water Pollution Control Act
- Watershed health and water quality protection and restoration activities achieve programmatic goals, objectives, and milestones of the AL NPS Management Program in accordance with CWA Section 319 and grant guidelines.

e) Surface waters and groundwater resources are protected and restored from nonpoint sources of pollution:
- Source Water Protection Assessments and Plans (Drinking Water and Groundwater) are developed and implemented
- Management plans and strategies to protect and restore wetland, estuary, riparian, and other natural resource areas and ecosystems are developed or implemented
- ADEM and ADPH onsite septic and disposal system enforcement and compliant processes are coordinated and enhanced

Section 8.4	**Goal 4 and Objective 4.x**
Long-term Goal 4:	**Enhance Institutional Capacity to Implement a Sustainable Statewide Nonpoint Source Pollution Management Program**
Long-term Objective 4	Continue to enhance NPS program efficiencies and effectiveness by updating goals and objectives by September 30, 2014, and every 5 years thereafter. (Replicate at minimum, every 5 years)
Short-term Objective 4.1	Continue to enhance Section 319 grant transparency and program accountability and management by implementing fiscally responsible and technology-based approaches. (Annual)
Short-term Objective 4.2	Continue to track diversity, participation rates and interests of NPS management program planning and implementation resource agencies, academic communities, groups, organizations, and other partners. (Annual)

Short-term Objective 4.3 Continue to track and publically report incremental progress and successful completion of NPS water quality restoration project outcomes (e.g., materials developed, reporting, measures and practices implemented, conferences/meetings facilitated or attended, etc.)
(Annual)

Short-term Objective 4.4 Continue to convey institutional capacity by submitting final TMDL and Section 319 grant guideline watershed-based planning and NPS pollutant load reduction success stories to EPA.
(Annual)

Section 8.4.1 Strategies to Achieve Goal 4 and Objectives 4

a) Continue to implement NPS best management practices to help ensure the public of clean and safe waters in accordance with:
- Clean Water Act Section 319
- Alabama Environmental Regulations and Laws
- Other relevant federal and state laws, rules, regulations, policies, guidelines or local community NPS pollution management ordinances as enforceable "back-up" authorities

b) Continue to leverage Section 319 and other NPS mitigation funding resources to cooperatively implement environmentally-protective and fiscally responsible management measures that will:
- Protect and improve the biological, physical and chemical parameters of impaired waters of the state
- Protect and preserve healthy watersheds and unimpaired or high quality waters of the state by preventing, reducing and abating future NPS threats to water quality
- Emphasize watershed-based planning involving all relevant agency programs and resources to mitigate an impairment
- Target NPS water quality protection and restoration activities to enhance water quality, biotic communities, aquatic habitat, land uses, hydrology, and geomorphic and other ecosystem processes
- Abate or reduce wasteful expenditures of human and financial capital needed to mitigate nonpoint sources of pollution
- Support efforts to achieve holistic outcome-based results rather than focusing on a specific NPS pollutant or activity-based action.
- Bring together a diverse mix or NPS partners and resources for the purpose of designing and implementing watershed-based solutions to protect and restore water quality.

c) Continue to promote a voluntary, flexible, targeted, and iterative statewide NPS management approach to enhance NPS program implementation efficiencies, achieve water quality improvement results, and meet state water quality standards:
- Enhance communication, coloration, coordination, and cooperation between the public and private sectors (e.g., continue to develop and maintain NPS partnerships, capacity, and processes; align and leverage NPS management roles, responsibilities, and resources)
- Initiate and enhance water quality protection and restoration activities that transcend political boundaries (e.g., interstate, regional, statewide, county, community, etc.)
- Enhance ADEMs Section 319 grant program leadership roles by partnering and collaborating with neighboring states to protect and restore priority impaired and unimpaired waters that cross state political boundaries
- Implement holistic NPS program management approaches (e.g., enhance effective, efficient, and expeditious administrative and financial management aspects)
- Link water quality protection and restoration to overall watershed health, community socio-economic conditions, and water quality benefits based on the best available scientifically-valid water quality data and information
- Target financial and technical resources to priority NPS watersheds including impaired and unimpaired surface and groundwaters based on the best available scientific-valid water quality data and information
- Protect and restore stream and riparian conditions, structure and functions by preventing them from becoming impaired from nonpoint sources of pollution.
- Protect and restore the physical, biological, and chemical conditions of regional, river basin, or watershed scope and scale ecosystems

d) Continue to utilize a NPS regulatory approach when the voluntary approach does not appear to be successful in preventing, reducing or abating nonpoint sources of pollution:
- Enforce applicable NPS laws, rules, and regulations (e.g., CWA, AL Water Pollution Control Act; local ordinances, etc.)
- Develop and promulgate new enforceable measures to mitigate NPS pollutant loadings to waters of the state as appropriate
- Promote a focus on ensuring citizens of Alabama are protected from significant risks to human health and the environment where they live, learn and work
- Fairly and effectively enforce federal and state rules and regulations to protect environmental and human health.
- Ensure that NPS water quality protection and restoration actions are integrally factored into relevant state natural resource, human health, economic growth, energy, transportation, agriculture, industry, and international trade strategies principles, plans and policies

e) Continue to ensure that the public and private sectors (e.g. resource agencies, communities, individuals, businesses, government officials, etc.) have access to sufficient and most recent water quality data and information to:
- Assist the public in making knowledgeable nonpoint source management measure and practice planning and implementation decisions
- Promote NPS water quality protection and restoration where citizens of Alabama live, visit, work, or recreate.

- Build public and private sector awareness and capacity to manage the often intricate and complex character of NPS pollution and its impacts on watershed and water quality protection and human health and safety
- Encourage personal and corporate environmental and human health protection responsibility, partnerships, values, and connections to the watershed. Develop and distribute relevant NPS planning and implementation tools and resources that:
  - ✓ Encourage citizen participation in NPS mitigation decision-making efforts (e.g., to make watersheds, communities, and ecosystems diverse, sustainable and economically productive)
  - ✓ Promote the development and distribution of Section 319 grant funded and other relevant resource agency programmatic data and information to increase NPS awareness and knowledge
  - ✓ Enhance individual and corporate use of nonpoint source management manuals, practices, standards, guidelines, models, technical assistance, technology transfer, etc., to help expedite and sustain implementation of the statewide and coastal NPS management programs

b) Continue to incorporate a cross-cutting NPS Major Category mitigation strategies:

- Improve the effectiveness and efficiency of multi-media programs (air, land and water) by strengthening NPS program staff skills, establishing MOA/MOU and cooperative agreement and scope of service documents, developing and managing internal review procedures; maximizing memorandum of agreements/understanding, developing and implementing watershed-based management plans, developing and evaluating metrics, enhancing project proposal, approval and funding processes; enhancing the skills and providing training for project proposers and subgrantees, improving education and outreach, and regular program/project documentation, evaluations and reporting.
- Refine and strengthen programmatic oversight to ensure the AL NPS Management Program, Section 319 grant funded projects, and
- other relevant resource agency programs and projects responsibility and cooperatively address state water quality standards
- Use a variety of NPS management approaches such as regulations, enforcement, research, technology, technical assistance, watershed and local community-based programs, and education and outreach to protect and restore watershed and water quality health and the state's natural resources.
- Work with partners to develop, demonstrate, and implement new, improved, and innovative technologies, tools and other approaches to address many and varied statewide NPS pollution management challenges and opportunities.
- Improve NPS program transparency and accountability by taking advantage of existing and emerging management and administrative tools to refine public and private sector communication, collaboration, coordination and cooperation.
- Identify and seek sufficient and self-sustaining sources of human and financial capital to provide the technology, training and tools to support NPS management program priorities.
- Cooperate with and seek to retain a diverse and creative NPS program partnership workforce equipped with technical skills, expertise, and knowledge to accomplish the goals and objectives of AL NPS Management Program and Section 319 grant program and to meet evolving environmental challenges (e.g. coordination with the Alabama Clean Water Partnership)

c) Continue to partner with and build strong working relationships with a variety of NPS lead state agencies with roles and responsibilities for day-to-day natural resource protection and restoration:

- Facilitate and expand opportunities for new, innovative and bold views, opinions, creativity and talents ("thinking outside the box")
- Clearly explain Section 319 grant project goals, objectives, and milestones so that everyone continues to "work off the same page" (even after interim course changes need to be implemented)
- Educate and empower local non-governmental agencies, groups, and individuals to make local decisions and implement local solutions using local resources.
- Enhance and ensure NPS programmatic accountability and transparency especially when public dollars are expended
- Increase public and private sector access to NPS water quality data and information and management resources, incentives and tools
- Ensure that environmental education and outreach is adequate, sustained, topical and audience specific, particularly when expressing the often convoluted approached and intricacies associated with voluntary and regulatory management approaches
- Develop and use traditional, new or innovative processes and tools to inform the public and private sector so that they have a greater understanding of the complexities and impacts of NPS pollution on watershed and water quality health and protection
- Enhance opportunities to enhance stakeholder input in management program decision-making processes that will affect them.
- Work collaboratively with relevant state and federal agencies, local watershed groups, and citizens to plan and implement NPS management practices in priority impaired watersheds (e.g. Section 303(d) Lists)
- Use Section 319 grant funding to partner with public and private sector agencies, non-governmental and community groups, academia and others to identify priority areas where NPS pollution is occurring and aggressive management program actions are needed to reduce pollutant causes and sources within those areas (e.g., provide and leverage financial assistance, technical support, technology transfer, education and outreach, etc.).
- Develop and incorporate NPS management programs and processes that raise public awareness and knowledge relative to NPS pollution, watersheds, and water quality, and encourage actions that the public and private sectors can take to reduce potential risks to their communities, homes, schools, and workplaces.
- Collaborate with relevant state agencies, public health officials, schools, municipalities, industry, organizations, etc, to focus resources on local community efforts to prevent, reduce and abate drinking water quality degradation.
- Provide policy and technical support and financial assistance to the public and private sectors to develop and implement NPS management measures and practices.
- Identify and implement ways to streamline NPS management decision-making processes to best meet the environmental and socio-economic needs of local communities while concurrently achieving the goals and objectives of the AL NPS Management Program.
- Promote, update, or sustain the development and implementation of Memorandums of Understanding /Agreements (MOUs/MOAs).
- Identify and integrate interstate and regional partners in intrastate NPS management decision-making processes.
- Collaborate with multiple partners at multiple scales, particularly in developing and implementing nonpoint source components of TMDLs to meet state water quality standards

d) Continue to align and integrate the Section 319 grant program to restore waters of the state and meet state water quality standards by leveraging resources and programs of relevant state and federal entities including but not limited to:

- USEPA - Region 4 Grant Programs
- USDA / NRCS - Farm Bill
- NRCS (National Water Quality Initiative and EQIP)
- Soil and Water Conservation Committee
- Alabama Department of Agriculture and Industries
- Forestry (Federal -USFS and state AFC , ADEM)
- SWCC - Erosion and Sediment Control
- Resource Extraction (State-ADIR and Federal - OSMRE)
- State Water Quality Monitoring Strategy
- Total Maximum Daily Loads
- State Nutrient Criteria Plan
- Clean Water State Revolving Fund
- Ground Water
- Drinking Water
- National Estuary Program (Mobile Bay)
- Coastal Nonpoint Pollution Control (ADEM; ADCNR); CZARA 6217; Gulf of Mexico Program
- ADAI - Pesticide Management
- U.S. Army Corps of Engineers (Mobile District)
- Natural Resource Management (USGS, GSA, TVA, USFWS)
- NPDES Stormwater Permit Programs (Construction Stormwater, MS4 -Phase II Stormwater, Animal Feeding Operations)
- State Regulations
- ADPH - Onsite Septage and Disposal
- Scrap Tire and Brownsfield
- Gulf of Mexico Program
- Volunteer Programs - Alabama Water Watch and Alabama Clean Water Partnership
- Climate Change (State and Federal)

e) Review state and federal consistency programs and processes:

- Continue to identify federal programs, lands and activities in Alabama that may not be managed consistently with the goals and objectives of the AL NPS Management Program.
- As appropriate, ADEM will seek EPA-Region 4 and/or EPA-HQ assistance to resolve particular federal consistency issues that arise between federal and state agencies relative to the AL NPS Management Program.

Section 8.4.2 Strategies to Enhance and Sustain Institutional Capacity

Overview: Institutional capacity continues to be enhanced using flexible, targeted, and iterative statewide NPS management approaches. Communication, collaboration, coordination, and cooperation are basic building blocks upon which the state's NPS Management Program is established and upon which Section 319 grant-funded project progress and success is sustained. Leveraging the resources of broadly-inclusive partners is also a fundamental but essential validation of institutional capacity and continues to be critical to ensuring program success. Other strategies include:

a) Resources to build public and private sector capacity include:

- Alabama NPS Management Program Annual Reports (*Annual*)
- EPA's national Grants Reporting and Tracking System (GRTS) database (*Annual*)
- Water Quality Reports (ADEM rivers, reservoir, and stream monitoring summaries)
- Institutional-based and project-specific documents, reporting systems /databases, and websites (*per project-specific and contractual agreement timelines).*

b) Fulfilling CWA Section 319(h)(11) obligations to publically report the following three NPS programmatic measures:

- Milestones (*Annual*)
- Reductions in NPS Pollutant Loadings (*Annual*)
- Improvements in Water Quality (*Annual*)

c) Integrating the Alabama NPS Management Program to achieve priority NPS components of the following EPA initiatives (*Annually*):

- National Water Program: Strategic Plan and Guidance (NWPG - FY2013 and future years)
- NWPG (Appendix A - Measures Summary)

d) Monitoring water quality to ensure clean and safe waters to Alabama citizens in accordance with:

- Clean Water Act
- Alabama Water Pollution Control Act
- Other relevant NPS pollution management federal and state laws, rules, regulations, policies, guidelines or local community ordinances.

e) Leveraging Section 319 grant funds with other public and private sector resources with the intention of developing and delivering mutually beneficial NPS programs, services and products, including but not limited to:

- Agency, academia, consultants, organizations, and other entities continue to partner together to identify and evaluate institutional status, success, indicators and measures, and future resource needs (e.g. develop, collect, and share services, resources, processes)
- Enhance collaboration, coordination, cooperation and communication (e.g. funds, tools, equipment, practices, programs, technologies)

- Deliver specific or general state-wide, watershed, or subwatershed level management measures and practices and education and outreach services and products (e.g. increase public awareness, knowledge, participation, program "buy-in," etc.)
- A holistic pollution, watershed health, and water quality protection and restoration approach continues to be used to incrementally achieve state goals and objectives (incorporates both voluntary and regulatory mechanisms)

Section 8.5 **Goal 5 and Objective 5.x**

Goal 5: **Facilitate the delivery of statewide Education and Outreach (E&O) to increase public knowledge and awareness relative to nonpoint source pollution, watershed health, water quality protection and restoration, and natural resource stewardship.**

Long-term Objective 5	Continue to facilitate the delivery of statewide and coastal zone NPS program communication materials and actions to enhance citizen education (e.g. awareness and knowledge; decision-making, problem solving, etc.) and outreach (e.g., dissemination of information; seeking input and active participation). (Replicate successful E&O programs and projects and continue to incorporate those approaches during 5-year NPS management program update iterations)
Short-term Objective 5.1	Continue to leverage Section 319 grant resources to cooperatively plan and develop NPS, watershed health and water quality protection and restoration E&O products for specific audiences (e.g. NPS major categories or place-based issues). (Annual)
Short-term Objective 5.2	Continue to leverage a mix of public and private sector resources to coordinate the delivery of specific NPS category specific E&O presentations, models, materials/documents, technologies, and assistance to specific targeted audiences. (Annual)
Short-term Objective 5.3	Continue to target E&O activities that address priority Section 319 and TMDL pollutant load reductions in at least one NPS impaired HUC-12 subwatershed. (Annual)
Short-term Objective 5.4	Continue to facilitate E&O activities to strengthen working relationships and linkages among relevant statewide and coastal programs, interstate, regional, and local entities (i.e., everyone "works-off-the-same-page") (Annual)

Section 8.5.1 Programmatic Strategies to Achieve Goal 5 and Objective 5 (2014 - 2019):

a) Continue to employ a suite of E&O activities to protect and restore the Alabama rivers, lakes, streams, wetlands, and estuarine and coastal zone aquatic ecosystems:
- Facilitate funding and resources to provide knowledge, expertise, technologies, and assistance to help citizens acknowledge and take responsible actions to protect, restore and maintain water quality and ecological productivity, integrity, or resilience.
- Coordinate and leverage resources to ensure that providers have the appropriate E&O resources (e.g. human and financial capital) to help citizens proactively prevent, prepare for, respond to, and recover from NPS pollution threats and impacts
- For activities where ADEM does not have adequate E&O expertise and resources, ADEM will continue to partner with the public and private and sectors to coordinate the delivery of E&O efforts and developing beneficial nonpoint E&O products and resources.
- Communicate data and information that will likely result in the implementation of a holistic watershed-based management plan.
- Recognize that federal, state, and local agencies, government officials, programs, project partners, and other NPS stakeholders are generally operating under funding and staffing resource constraints that may impede E&O needs, services, products and progress.

b) Continue to develop and demonstrate E&O materials and practices and models that can be effectively, efficiently and economically accessed, modified, or duplicated for use in other statewide or watershed specific areas and situations:
- Address NPS issues using a holistic watershed health and water quality threat and impact E&O approach
- Involve critical thinking, problem solving and decision-making steps with the ultimate E&O purpose to raise awareness and knowledge relative to enhancing environmental stewardship and improving water quality
- Communicate E&O successes to various audiences to maximize public interest and enhance program and project accountability

c) Promote nonpoint source/water quality programs and processes to increase in number and extent, academic community interest and participation in E&O development and delivery:
- Enhance efforts and resources to provide state course of study-approved NPS / watershed / water quality curricula in elementary middle and high schools, as well as college-level courses

- Enhance interstate and international E&O training and interaction opportunities

d) Continue to support E&O activities designed to promote environmental stewardship where citizen's reside, work, visit, and recreate:
- Update or create NPS brochures, maps, manuals, guidelines, handbooks, reports, news articles, standards, forms, public serve announcements, signs, posters, displays, models, etc.
- Facilitate field tours of NPS management measure implementation effectiveness ("proof-of-concept" demonstrations)

e) Continue to use Section 319 grant funding as allowable and practical to facilitate planning, production, or distribution of at least one nonpoint source E&O document or multi-media product annually:
- Facilitate the production and delivery of E&O media and products that are relevant and receptive to both broad-based and smaller audiences and individuals
- Engage the "market" to assess increased NPS knowledge and awareness, positive attitudes, and buy-in effectiveness

f) Continue to assess E&O efforts to address NPS challenges and make necessary programmatic adjustments as needed:
- Update and maintain the development and implementation of Memorandums of Understanding /Agreements (MOUs/MOAs).
- Identify, integrate and leverage effective national and regional programs, resources, partnerships and processes
- Provide decision-makers with the knowledge they need to make smart and balanced NPS management decisions
- Continue to build agency capacity to develop and implement nonpoint source TMDLs and achieve state water quality standards
- Identify and produce E&O products and services relative to water quality data metrics to enhance natural resource stewardship
- Review and comment on federal E&O grant programs, guidelines and technical bulletins with an impact on NPS and water quality protection and restoration
- Coordinate the development, assimilation, or distribution of multi-media products and activities, to and from, state planning agencies and organizations
- Continue to identify and apply E&O approaches to achieve NPS pollutant load reductions and positive water quality protection behaviors
- Coordinate the development and delivery of E&O products and services to help mitigate particularly complex, difficult and long-term NPS pollution problems.

g) Continue to provide E&O efforts that critically and timely reflect the latest "science" of NPS management measures and technology:
- Demonstrate new, emerging and innovative multi-disciplinary research and product and practice transfer, and approaches.
- Use Section 319 grant and other public and private resources to establish and maintain E&O partnerships with the academic community, consultants, organizations, agencies, regulated and non-regulated entities and others
- Identify new and innovative programs, practices, tools, and mechanisms to protect and restore ecosystem, watershed, water quality, and human health (e.g. collaboration, cooperation, coordination and communication)
- Support and distribute research data and information to plan, enhance, promulgate, and fulfill statutory, grant guideline, and project-specific needs and requirements relative to NPS management program implementation
- Support the production and delivery of timely and accurate NPS data and information using various decision-support tools (e.g. models, databases) to help the public evaluate NPS program and project accountability and management measure implementation effectiveness

Section 8.5.2 Strategies to Enhance NPS and Water Quality Improvement Education and Outreach

a) Public and private sector NPS pollutant load reduction and water quality improvement data and information to increase public awareness and knowledge is provided by:
- Alabama NPS Management Program Annual Reports (*Annual*)
- Grants Reporting and Tracking System (GRTS) database (*Annual*)
- Water Quality Reports (ADEM rivers, reservoir, and stream monitoring summaries)
- Public and private sector institutional-based and project-specific documents, reporting systems/databases, websites, etc.

b) Fulfill the CWA Section 319(h)(11) obligation to publically report the following three NPS programmatic measures:
- Milestones (*Annual*)
- Reductions in NPS Pollutant Loadings (*Annual*)
- Improvements in Water Quality (*Annual*)

c) The Alabama NPS Management Program is integrated with and designed to help achieve priority NPS components of the following EPA initiatives (*Annually*):
- National Water Program: Strategic Plan and Guidance (NWPG - FY2013 and future years)
- NWPG (Appendix A - Measures Summary)

d) Help ensure Alabama citizens of clean and safe state waters in accordance with:
- Clean Water Act
- Alabama Water Pollution Control Act
- Other relevant NPS pollution management federal and state laws, rules, regulations, policies, guidelines or community ordinances.

e) Section 319 grant funds are leveraged with public and private sector resources with the intention of developing and delivering mutually beneficial nonpoint source E&O programs, services and products:
- Agency, academic community, consultants, organizations, and other entities partner together to identify and evaluate E&O successes and future needs (e.g. develop, collect, or share services, resources, processes, etc.)

- Collaboration, coordination, cooperation and communication relative to NPS program staff, funds, equipment/tools, technologies, etc.
- Statewide, watershed, or subwatershed level products are specifically targeted and delivered to increase NPS and water quality protection and restoration awareness, knowledge, skills, participation and public buy-in
- Watersheds and ecosystems impaired by anthropogenic perturbations (e.g., invasive species, climate change/greenhouse gas emissions, land use changes, aquatic species/habitat degradation, etc.)
- A complimentary mix of voluntary and regulatory approaches are used to protect and restore watershed health
- Economic benefits associated with implementation of a holistic watershed-based management approach is presented to the public: (e.g., fishing, swimming, boating, hiking, birding; flooding issues, aquifer recharge zones and surface water sources protected, reduced drinking water treatment costs., etc.)
- Environmental benefits for implementing a watershed-based management approach is continually stressed

f) At least one watershed-based management plan is developed or implemented that incorporates the E&O components of EPAs 9 elements of a watershed-based plan (FY14 and future year S. 319 guidelines) (*Annual*).

g) E&O products enhance the development and implementation of a Total Maximum Daily Load

h) E&O products and services planned, developed, or distributed to protect:
- Unimpaired/high quality waters (e.g. Outstanding Alabama Waters, Outstanding Natural Resource Waters, Treasured Alabama Lake)
- Watersheds or portions of watersheds with unique, valuable, or threatened species or critical aquatic habitats of these species
- Waters and watershed areas (including ground waters where appropriate) that serve as a public drinking water supply)
- Protection of high quality waters in watersheds that contain some impairments
- Waters near geographic areas where rapid land use development is occurring
- Waters where data trends indicate water quality degradation is occurring (CWA S. 305(b) Reports)
- Restored waters requiring continued water quality assessment and maintenance of BMPs to assure unimpaired status
- Watersheds contributing high nutrient loads to downstream waters (CWA S. 305(b) Reports)

Section 8.6 Annual NPS Program Implementation Goals and Objectives (2014 – 2019)

Overview: Periodic updates of the AL NPS Management Program (minimum 5-year iterations) enhance opportunities for stakeholders to refine NPS program goals and objectives and success measures and indicators. Sustained communication, coordination, cooperation, and collaboration are essential programmatic elements and continue to strengthen statewide and coastal NPS program watershed health and water quality protection and restoration partnerships.

Alabama NPS Management Program Goals and Objectives for fiscal years 2014 - 2019 are presented in **Table 8.6** below. Annual NPS program milestones are presented in **Table 8.7**. Both Tables are also designed to be specific enough for EPA to determine annual satisfactory state NPS progress in accordance with CWA Section 319(h) (10).

Table 8.6: Alabama NPS Programmatic Goals and Objectives for Fiscal Years 2014 - 2019

Goal 1: Continue To Collect Surface Water and Groundwater Data Using annual the ADEM Statewide Water Quality Monitoring Strategy To Assess Whether State Waters Meet State Water Quality Standards and Use Classifications.

Objectives	Status	Implementation Strategies to Ensure Continued Statewide Program Progress (e.g. Project #)	NPS Success Measures and Indicators Targeted (Derived From Table 8.8)
Long-term Objective 1: Continue to collect WQ monitoring data to characterize the chemical, physical, and biological conditions of subwatersheds in a priority major river basin and to help evaluate whether waters fully or partially meet state water quality standards and water use classifications. **Timeline**: Indeterminate: Replicates per annual ADEM Monitoring Strategy Planning.			
Short-term Objective 1.1: Continue to collect WQ data to identify, list and categorize NPS threats and impacts to surface waters and groundwaters of the state in the latest CWA Section 305(b) / Integrated Water Quality Monitoring and Assessment Report. **Timeline**: Biennial CWA Section 305(b)			

Report; Replicate as a continuing component of the 5-year rotating basin schedule			
Short-term Objective 1.2: Continue to collect or assess WQ data from a priority CWA Section 303(d) listed HUC-12 subwatershed to support the development or implementation of a watershed-based management plan that incorporates Section 319 grant guideline 9-Key watershed-based plan elements. **Timeline**: Annual			
Short-term Objective 1.3: Continue to collect or assess Section 319 grant-funded watershed project WQ data to track restoration progress and successes (e.g. achieve priority TMDL and Section 319 pollutant load reductions; meeting state water quality standards, etc). Timeline: Annual			
Short-term Objective 1.4: Collect data to target and leverage Section 319 and other public and private funds and resources to gain NOAA/EPA final program approval of the Alabama Coastal Nonpoint Pollution Control Program (including meeting and sustaining implementation of Interim Decision Document recommendations) relative to Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 . **Timeline**: Annual			
Short-term Objective 1.5: Continue to partner with USDA-NRCS to monitor priority National Water Quality Initiative watersheds to help document pre- and post- conservation practice implementation effectiveness. **Timeline**: Annual			

Goal 2: Target NPS Pollution Program Resources to Restore, Protect, and Maintain Beneficial Uses of Waters

Objectives	Status	Implementation Strategies to Ensure Continued Statewide Program Progress (e.g. Project #)	NPS Success Measures and Indicators Targeted (Derived From Table 8.8)
Long-term Objective 2: Continue to leverage NPS management measure and practice resources to help ensure the public of clean and safe waters in accordance with the following authorities such as: • Clean Water Act Section 319 • Alabama Water Pollution Control Act • Other relevant NPS pollution federal and state laws, rules, regulations, ordinances, or policies and guidelines. **Timeline**: (Sustain. Replicate Annually)			
Short-term Objective 2.1: Continue to develop and implement the NPS components of 9-key element watershed plans that will not/do not require or request a commitment of Section 319 grant funded implementation resources. **Timeline**: Annual			
Short-term Objective 2.2: Continue to leverage public and private sector resources to			

implement NPS best management practices to restore impaired Section 303(d) listed waters per a Total Maximum Daily Load (TMDL) or to protect high quality waters identified in Section 305(b) Integrated Reports. **Timeline**: Annual			
Short-term Objective 2.3: Continue to leverage Section 319 grant resources to achieve priority NPS (i.e., nitrogen, phosphorus, and sediment) and TMDL pollutant of concern load reductions. Timeline: Annual			
Short-term Objective 2.4: Continue to place strong emphases on restoring HUC-12 delineated watersheds by facilitating and leveraging funding, BMP implementation, education and outreach, technology transfer, and technical assistance resources. **Timeline**: Annual			

Goal 3: Implement Nonpoint Source Best Management Practices to Restore and Protect Watershed Health and Water Quality

Objectives	Status	Implementation Strategies to Ensure Continued Statewide Program Progress (e.g. Project #)	NPS Success Measures and Indicators Targeted (Derived From Table 8.8)
Long-term Objective 3: Continue to facilitate a partnership approach to implement NPS measures and practices to restore watersheds and water quality and protect human health from nonpoint sources of pollution. **Timeline**: (Replicate Successes per 5-year Programmatic Update Iterations)			
Short-term Objective 3.1: Implement BMPs in at least one HUC-12 subwatershed, exclusive of Section 319 grant funding, to restore water quality and watershed productivity and resilience. **Timeline**: Annual			
Short-term Objective 3.2: Employ a suite of measures (including retrofits) to protect, maintain and restore the ecological integrity of aquatic systems in the state's rivers, lakes, wetlands, streams, and estuarine waters. **Timeline**: Annual			

Goal 4: Enhance Institutional Capacity to Implement a Sustainable Statewide Nonpoint Source Pollution Management Program

Objectives	Status	Implementation Strategies to Ensure Continued Statewide Program Progress (e.g. Project #)	NPS Success Measures and Indicators Targeted (Derived From Table 8.8)
Long-term Objective 4: Continue to enhance programmatic efficiency and effectiveness by updating programmatic Goals and Objectives by September 30, 2014. **Timeline**: (Replicate every 5 yrs.)			
Short-term Objective 4.1: Continue to enhance S. 319 grant transparency, program accountability, and fiscal management by			

implementing iterative technology-based approaches. **Timeline**: Annual			
Short-term Objective 4.2: Continue to track the diversity of watershed planning and implementation partnerships. (e.g. agency, university, advisory, others) **Timeline**: Annual			
Short-term Objective 4.3: Continue to track successful completion of planned NPS water quantity restoration outcomes (e.g., materials developed, reports generated, practices implemented, conferences/meetings facilitated or attended, etc.) Timeline: Annual			
Short-term Objective 4.4: Continue to convey institutional capacity by developing or submitting final TMDL and Section 319 NPS watershed planning and pollutant load reduction success stories to EPA. **Timeline**: Annual			

Goal 5: Facilitate statewide Education and Outreach (E&O) activities to increase the public's knowledge and awareness about nonpoint source pollution, watershed health, water quality protection and restoration, and natural resource stewardship.

Objectives	Status	Implementation Strategies to Ensure Continued Statewide Program Progress (e.g. Project #)	NPS Success Measures and Indicators Targeted (Derived From Table 8.8)
Long-term Objective 5: Continue to facilitate the delivery of statewide and coastal zone NPS program communication materials and actions to enhance citizen education (e.g. awareness and knowledge; decision-making, problem solving, etc.) and outreach (e.g., dissemination of information; seeking input and active participation **Timeline**: (Replicate Processes Every 5 years)			
Short-term Objective 5.1: Continue to leverage Section 319 grant resources to plan, produce, or disseminate water quality based E&O products that target specific audiences (e.g. NPS pollution category or place-based issues). **Timeline**: Annual			
Short-term Objective 5.2: Continue to leverage public and private sector resources to develop and deliver E&O presentations, models, documents, and technologies. **Timeline**: Annual			
Short-term Objective 5.3: Continue to deliver E&O activities that target specific Section 319 and TMDL priority pollutants in at least one NPS impaired HUC-12 subwatershed. Timeline: Annual			
Short-term Objective 5.4: Continue to facilitate E&O activities to strengthen working relationships and linkages to appropriate interstate, state, regional, and local entities (i.e., everyone "works-off-the-same-page")			

Timeline: Annual			

Section 8.7 Annual NPS Milestones for Fiscal Years 2014 – 2019

Overview: Annual AL NPS Management Program implementation activities and Section 319 grant-funded project progress outcomes are presented in **Table 8.7.** The following Annual Milestones are designed to ensure incremental progress continues to be made in meeting the state's NPS programmatic goals and objectives presented in **Table 8.6**. The Table is a significant component of the Section 319 Workplan Proposal process and the Annual Alabama NPS Management Program Report that is submitted by ADEM to EPA each year. *Annual* milestones are designed to be specific enough for the public and private sectors to track *Annual* statewide NPS programmatic implementation progress and for EPA to determine *Annual* satisfactory progress under CWA Section 319(h) (8).

Table 8.7 Annual NPS Programmatic and Section 319 Grant Funding Milestones for Years 2014 – 2019

(1) Water Quality Restoration	**Year 2014**		
Measure: Water Quality Monitoring Data Indicates a Primarily NPS Impaired Waterbody or Segment Is Now Fully or Partially Meeting State Water Quality Standards			
(Baseline is 2013)	**Indicator**	**Waterbody/ HUC**	**Comments**
a) Number of Waterbodies identified in AL's 2000 or later year Integrated Reports (IR) as being primarily NPS impaired that now meets state water quality standards and designated uses (WQ-10): (Goal is minimum 1 /year): (i.e., Category 5 / Section 303(d) listed Impaired Waters)			
Number of WQ-10 Waterbodies Fully Restored or Meets State Water Quality Standards or Designated Uses			
Number of WQ-10 NPS / Section 319 Success Stories Developed as a Result of Full Restoration			
Number of WQ-10 NPS / Section 319 Success Stories That Are Being Developed as a Result of Full Restoration			
Number of WQ-10 NPS / Section 319 Success Stories Submitted to EPA Region 4 as a Result of Full Restoration			
Number of WQ-10 NPS / Section 319 Success Stories Listed by EPA-HQ as Result of Full Restoration			
b) Number of Waterbodies identified in AL's 2002 IR as not attaining water quality (WQ) standards where state water quality standards are now partially attained using a watershed-based approach (SP-12): (Goal is minimum 1 /year): (i.e., Category 5 / Section 303(d) listed Impaired Waters)			
Number of Waterbodies Where the Watershed Approach Was Used to Target or Restore Impairments to Water Quality			
Number of SP-12 NPS / Section 319 Success Stories Developed to Proclaim WQ Standards are Partially Restored			
Number of SP-12 NPS / Section 319 Success Stories That Are Being Developed to Proclaim WQ Standards are Partially Restored			
Number of SP-12 NPS / Section 319 Success Stories Submitted to EPA Region 4 as a Result of WQ Standards Now Being Partially Restored			
Number of SP-12 NPS / Section 319 Success Stories Listed by EPA-HQ as Result of WQ Standards Being Partially Restored			

(2) Nonpoint Source Pollutant Load Reductions (Year 2013 Baseline)	**Year 2014**	
Measure: Cumulative Estimated Statewide NPS Pollutant Load Reductions		
(Baseline is FY 2013)	**Indicator**	**Comments**
a) Pounds of Nitrogen (N) Pollutant Load Reductions Annually from Nonpoint Sources Using Section 319 Grant Watershed Project Funds (WQ-9a): (lbs/year)		
Number of Section 319 Funded Projects Reporting "N" Pollutant Load Reductions: (Total Watershed Projects / Total Projects Targeting "N")		

Load Reductions Entered in GRTS by Feb 15: (Yes; No)		
b) Pounds of Phosphorus (P) Pollutant Load Reductions Annually from Nonpoint Sources Using Section 319 Grant Watershed Project Funds (WQ-9b): (lbs/year)		
Number of Section 319 Funded Projects Reporting "P" Pollutant Load Reductions: (Total Watershed Projects / Total Projects Targeting "P")		
Load Reductions Entered in GRTS by Feb 15: (Yes; No)		
c) Tons of Sediment (S) Pollutant Load Reductions Annually from Nonpoint Sources Using Section 319 Grant Watershed Project Funds (WQ-9c): (tons/year)		
Number of Section 319 Funded Projects Reporting (S) Pollutant Load Reductions: (Total Watershed Projects / Total Projects Targeting "S")		
Load Reductions Entered in GRTS by Feb 15: (Yes; No)		
d) Number of Impaired Waterbodies/Segments Where "Other" NPS Pollutant Load Reductions are Achieved (#)		
Priority TMDL Pollutants of Concern (Pollutants Other than N, P and Sediment) Were Mitigated Using Leveraged Section 319 Watershed Project Funds: (Yes; No)		
Section 319 Watershed Project Funds to Compliments and Leverage Technical and Financial Assistance from 2 or more Federal and State Resource Agencies: (Yes; No)		
"Other" Pollutant Project Narrative/Data to be included in the NPS/Section 319 Annual Report: (Yes; No)		

(3) Project-Level Planning and Restoration and Activities	**2014**	
Measure: Watershed Project Funds Target NPS Impaired or Mixed Source Impaired Section 303(d) Listed Waters		
Baseline is FY2013 and 2002 Impaired Waters List	**Indicator**	**Comments**
a) Watershed-based Plans or Acceptable Alternative Plans to be Completed Prior to Implementing On-The-Ground BMPs using Section 319 Watershed Project Funds: (Yes; No)		
At least two (2) EPA 9-key Element Watershed-based Plans are Drafted or Final Plans Developed Annually: (#)		
At least two (2) EPA 9-key Element Watershed-based Plans Begin Implementation Annually: (#)		
Appropriate Stakeholders Were Involved in Watershed Planning and Implementation Processes: (Yes; No)		
All current mandated project data elements are entered into GRTS with no exceptions associated with the previous year Section 319 grant award noted by Region 4 or EPA HQ remaining unresolved: (Yes: No)		
Progress schedules reasonably ensure completion within the grant funding periods: (Yes; No/explain delay; problems, adverse conditions)		

(4) Program Management and Accountability (Year 2013 Baseline)	**Indicator**	**Year 2014**
Measure: The NPS Management Program Increases Implementation Efficiencies		
Baseline is FY2013	**Indicator**	**Comments**
a) Program Performance Issues/Concerns and Associated Corrective Actions Continue to Be Addressed to Meet Foundational Aspects of Section 319 Grant Guidelines and Funding/Management Requirements (Yes; No)		
A statewide NPS project workplan RFP to be submitted to the public within 6 months of the fiscal year begin date (prior to Sept 30): (Yes; No)		
Previous Year Section 319 funds to be obligated by ADEM within one (1) year of the date of receipt from EPA Region 4: (Yes; No)		
Programmatic and financial systems to be developed,		

evaluated, revised or updated to enhance project tracking and reporting: (Yes; No)		
Mandated project elements entered into GRTS prior to Feb 15th): (Yes; No)		
NPS staff facilitate or participate in at least one (1) NPS related education and outreach or training program activity at least one (1) time per month to enhance public awareness and knowledge: (Yes; No)		
Annual Regional and National GRTS and NPS Program / Section 319 Managers Meetings are Attended as scheduled (Yes; No)		
Environmental data to be collected to assess NPS water quality impacts continues to be input into ADEM-specific, STORET or other publicly available databases or reporting formats: (Yes; No)		
ADEM to continue to partner with USDA-NRCS to select and/or monitor water quality for at least one (1) NWQI priority watershed: (Yes; No)		

Section 8.8 Measures and Indicators of NPS Program Implementation Progress and Success

Overview: In order for the public to validly and comprehensively assess watershed health and water quality improvements and NPS pollutant load reduction progress, unique environmental measures and indicators are needed. While NPS program implementation progress planning and implementation success in Alabama is a direct result of the work of cooperative partnerships and resource leveraging, substantial improvements to some impaired waters may require a considerable investments of human and financial capital and can take many years to achieve.

Several national environmental protection strategies are presented in the EPA FY 2014 National Water Program Measures (and as updated) to protect and restore water quality. At least three of these national reporting Water Quality Measures Definitions (WQ-9 a, b, c; WQ-10 and WQ-12) are applicable to the NPS management program in Alabama. These measures are typically reported annually by ADEM to EPA for the purposes of measuring overall NPS program and Section 319 grant progress; including but not limited to delivering WQ-10 and WQ-12 success stories, meeting statutory obligations under Section 319(h)(8), and reporting relative to EPAs Grant Reporting and Tracking System (GRTS); Watershed Assessment, Tracking and Environmental Results (WATERS) Information System (including Section 305(b) Integrated Reports and Section 303(d) lists), and Consolidated Assessment and Listing Methodology (CALM). State-specific measures and indicators in Alabama are re-evaluated, amended or modified, at a minimum, every 5 years as part of the AL NPS Management Program updating process, as interim environmental monitoring data and information is collected, as NPS threats and impacts are better assessed and understood, and as changes in mitigation resources are realized.

National NPS programmatic indicators and measures are generally broad in scope and may not capture relevant Alabama-specific program initiatives. Measures and indicators presented in **Table 8.8** are representative of options that AL NPS Management Program and Section 319 grant program stakeholders may use to evaluate programmatic, project-level, and site-specific outcomes. These indices are designed to be responsive to land uses and particular locations, settings or circumstances, and appropriate to many and varied statewide and project-specific environmental conditions and program challenges. They are also perceived to be most relevant to assessing program accountability, fiscal responsibility, and water quality stewardship in Alabama. The AL NPS Management Program continues to incorporate an open-ended comment approach to provide the public and private sectors with ample opportunities to make practicable suggestions relative to NPS program measures and indicators.

Table 8.8 Potential Measures and Indicators of NPS Program Implementation Progress and Success

I. Water Quality Improvements from Nonpoint Source Controls

a.	Rivers, stream, lakes, wetlands, or estuarine and coastal square miles are expected to fully meet state water quality standards (e.g., number, percent, miles, sq. miles, acres, etc.)
b.	Threats or impacts to watershed and water quality are targeted to prevent, reduce or abate NPS impacts as determined by valid water quality monitoring data or modeled estimates (e.g., source, cause, extent, etc.)

c.	Development or implementation of water quality management plans or activities target reductions in "X" tons of sediment, "Y" pounds of nitrogen, or "Z" pounds of phosphorus entering waters of the state annually
d.	Impaired waters to be removed or are expected to be delisted from the Section 303(d) lists (number, extent)
e.	Leverages CWA S. 106 or other WQ funding resources in NPS impaired watersheds where Section 319 grant funded projects have been implemented or may occur (e.g. ambient; pre /post-BMP effectiveness, etc.).
f.	Targets a USDA-NRCS National Water Quality Initiative (NWQI) priority watershed (e.g., planning, leverages resources, BMP implementation, WQ monitoring, etc.)
g.	Impaired riparian areas or NPS pollutant filter buffers along the state's streams or other publically-owned water bodies are targeted for improvement, protection, or restoration (e.g., extent, length, width, causes)
h.	Enhances or sustains implementation of CZARA/6217 management categories or interim decision document recommendations for obtaining final coastal NPS control program approval
i.	Targets protection or restoration of the natural chemical, physical or biological conditions of publically-owned lakes or reservoirs and/or shoreline functions (e.g., extent, length or width, causes)
j.	Targets protection or restoration of marine aquatic resources, coastal estuaries, or wetlands (e.g., extent, length or width, causes, human health and safety)
k.	Targets prevention or reduction potentials for public beach closures and human water contact warnings (e.g., extent, length or width, causes)
l.	Targets groundwater and drinking water resources or recharge areas (e.g., causes, areal extent, etc.)
m.	Targets reductions or lifting of fish or shellfish consumption advisories (e.g., number, areal extent, causes)
n.	Previously closed shellfish beds may be opened or protected from NPS threats (e.g., extent, causes, etc.)
o.	Water quality protected or restored using low impact development or "green" measures and practices

II. Interim Water Quality Protection and Hydrologic Protection and Restoration

a.	Rivers, streams, lakes, wetland, estuarine, or coastal areas is expected to partially meet one or more numeric state water quality standards (e.g., number, miles, sq. miles, acres, etc.)
b.	Incremental progress toward attaining full restoration of NPS impaired waterbodies to be documented through development of "success stories" and submitted as an EPA website feature story
c.	Achieves incremental progress in meeting partial NPS pollutant load reduction priorities of a 9-key element watershed-based plan or EPA-approved alternative water quality protection / restoration plan
d.	Priority Section 319 grant funded watershed project and/or priority TMDL pollutants of concern load reductions are specifically targeted (e.g. type, extent, number)
e.	Implementation of recommended Watershed-based Plan and TMDL mitigation measures or practices uses a partnership-based "phased" approach (e.g. %, number, type, extent, etc.)
f.	Water quality trend data is tracked over time to help the public evaluate project success in meeting priority NPS pollutant load reduction targets (e.g. N, P, TSS, pathogens, etc.).
g.	Trophic status scores (Carlson's), secchi disk, or chlorophyll *a* /nutrient roles in public lakes and reservoirs are measured and tracked over time
h.	Coastal nonpoint control program conditional approval measures continue to be planned and implemented
i.	Green infrastructure / low impact development designs are developed (e.g. number, types, sq. ft., etc.)
j.	Shoreline restoration /riparian buffers enhance or protect public waters and lands (e.g. number, extent)

III. Protection of High Quality Waters

a.	Special designated or outstanding high quality waters of the state continue to be protected from nonpoint source threats (e.g. areal extent, categories)
b.	Regulations and criteria to ensure designated uses of surface waters are maintained or programs are developed and implemented to keep waters of the state that may be threatened but not yet impaired from being included on the states' impaired waters lists
c.	Valid, science-based water quality data collected to ensure unimpaired water quality parameter trends remain stable (e.g. biocriteria, DO, pathogens, etc)
d.	Waterbody segments are verified or expected to be listed as Outstanding National Resource and Treasured Alabama Lakes or Outstanding Alabama Waters lists (e.g. increase in number, length, width, etc)

IV. Nonpoint Source Pollutant Load Reductions

a.	Watershed-based management plan measures target priority Section 303(d) / TMDL pollutant load reductions

	(e.g. lbs, tons, %, etc.)
b.	Section 319 grant guideline priority NPS pollutant load reductions are targeted (N, P, sediment, pathogens)
c.	BMPs implemented on critical areas demonstrate project-level accountability, fiscal responsibility, and effective targeting of measures to achieve targeted NPS load reductions (e.g. locations, number; types, etc.)
d.	Biocriteria, low dissolved oxygen, and other water quality parameters improve to meet state numerical or narrative water quality standards as a result of Section 319 funded project implementation
e.	Trophic trends and scores (Carlson's), secchi disk transparency depths, and/or chlorophyll-*a* parameters for publically-owned lakes or reservoirs are expected to improve over time
f.	Future NPS pollutant loadings from human origin activities are prevented (e.g., amount, cause, extent, etc.)
g.	Targets major river basin / large scope and scale pollutant load reductions holistically (e.g., extent, causes)

V. Implementation of Nonpoint Source Controls

a.	Dedicated planning is designed to ensure project implementation accountability and fiscal responsibility
b.	The NPS components of a watershed-based management plan (e.g. 9-key watershed plan) are implemented using a mix of inclusive partners and leveraged resources
c.	Supports development of statewide and coastal program NPS management plans and leverages the resources of both programs for partners to cooperatively mitigate surface water and groundwater issues and concerns
d.	Local public and private funds and resources increase local stakeholder capacity by enhancing project planning and implementation efficiencies and effectiveness
e.	Private entities provide real and in-kind resources to voluntarily install NPS management measures in priority impaired areas exclusive of federal funding (e.g. number; amount)
f.	Program or project efforts align with USDA "Farm Bill" conservation / incentive programs (e.g. NWQI BMP implementation, water quality monitoring, coordination, technical assistance, etc.)
g.	Facilitates and sustains implementation of applicable NPS components of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA 6217),NOAA/EPA interim decision document recommendations, or targets final coastal nonpoint pollution control program approval initiatives
h.	Integrates with NPS pollution control efforts of the EPA National Estuary Program (Mobile Bay)
i.	Coordinates with or leverages Clean Water State Revolving Fund (CWA Title VI) resources (e.g., stormwater management, protecting stream channel integrity and habitat, low impact development, etc.), or Drinking Water State Revolving Fund (e.g., source water protection) resources (number, types of BMPs)
j.	Pervious surface measures are installed or poor BMP performance areas retrofitted (e.g., number and types of BMPs; extent, sq. footage) to reduce NPS runoff and adverse threats and impacts to water quality
k.	Native aquatic organisms and aquatic habitat impaired or threatened by NPS runoff are targeted, protected, enhanced or restored (e.g. areal extent)
l.	Invasive species problems associated with anthropogenic activities to be targeted and/or NPS management measures are implemented that also help to re-introduce or sustain established native species
m.	New Low Impact Development measures will be installed (e.g., number and types, extent, sq. footage) and/or engineered structural measures to be removed or retrofitted with "Green Infrastructure" measures
n.	Planning, implementation, maintenance, and monitoring resources are well integrated and leveraged (e.g. programs, cost-share / incentives, research, education, regulations, monitoring/assessment, reporting, etc.)
o.	Public and private sector post-project maintenance of NPS control measures are promoted (e.g., number, funding, time, efforts and other resources)
p.	Local citizens will use local resources to plan and implement local water quality restoration and protection activities to meet local environmental protection and socio-economic targets
q.	Expected water quality improvement and use benefits justify project costs to treat complex and diffuse nonpoint sources and causes (e.g., solutions are driven by strong science and data; costs are reasonable, eligible, necessary, etc.)

VI. Nonpoint Source Education and Outreach

a.	NPS education, technology transfer, or technical assistance will directly target watershed health and water quality impairments (e.g., category, practice or site-specific; pollutant type/source/cause specific; participate rates, audience numbers and diversity, etc.)
b.	Increased stakeholder awareness and knowledge is expected to result in positive environmental protection and restoration actions and attitudes over time (e.g., surveys, statistical-based social monitoring, qualitative and quantitative scores/responses; sign-ups, self-reporting, social science analyses, increased volunteerism,

	increased public interest and input, etc.)
c.	Integrates a public and private sector partnering approach (e.g. number, programs, entities represented, etc.)
d.	Targets specific individuals and many and varied audiences to best achieve positive changes in water quality awareness (e.g., participant numbers pre or post project; number of meetings, events, field tours, etc.)
e.	Targets NPS pollution prevention as a management practice priority (e.g., reductions reported in tons or lbs; implements a new or enhances an on-going initiative, provides/promotes education and outreach, etc.)
f.	Develops or demonstrates assessment and monitoring technologies and protocols to enhance data and information gathering (e.g., 303(d), TMDL, S. 319; number and type implemented at critical source area)
g.	Nonpoint source management actions are driven by a TMDL, watershed-based management plan, or priority public health and safety goals and objectives.

Chapter 9: Section 319 Nonpoint Source Grant Program

Section 9.1: Overview

The Federal Water Pollution Control Act 101(a) (7), Declaration of Goals and Policy states, "*it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution*." (33 U.S.C. 1251 et seq.). Congress enacted Section 319 of the Clean Water Act in 1987, establishing a national program to control nonpoint sources of water pollution. Although nonpoint source (NPS) pollution is not defined in the Clean Water Act; a working definition is that NPS pollution includes pollution caused by rainfall or snowmelt moving over and through the ground and carrying natural and human-made pollutants into lakes, rivers, streams, wetlands, estuaries, other coastal waters and ground water. Atmospheric deposition and hydrologic modification are also sources of nonpoint pollution. Grant funding appropriated under Section 319(h) can be used to implement state NPS programs including, as appropriate**,** non-regulatory or regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer, and demonstration projects to achieve implementation of best management practices and water quality goals. Under Section 319(a), the state developed a NPS assessment report that identified NPS pollution problems and sources responsible for the water quality impairments. Under Section 319(b), the state adopted an AL NPS Management Program that continues to provide a good foundation for articulating strategies needed to address the causes of NPS pollution and to achieve and maintain state water quality standards.

On September 4, 1987, Governor Guy Hunt designated the Alabama Department of Environmental Management as the lead state agency responsible for managing nonpoint source pollution in Alabama, preparing Alabama's Nonpoint Source Assessment Report and the Alabama Nonpoint Source Management Program, and for fulfilling the states responsibilities under Section 319 of the Clean Water Act. According to the Governor's designation, ADEM has authority to, "…*take all actions necessary and appropriate to secure to the state the benefits of said federal act under the Alabama Water Pollution Control Act, Code of Alabama 1975, Sec. 22-22-12, and the Alabama Environmental Management Act, Code of Alabama 1975, Sec. 22-22A-4(n) (1984).*" In 1989, Alabama Attorney General Don Siegelman certified that the State had enacted legislation and granted ADEM adequate authority to implement the Alabama Nonpoint Source Management Plan pursuant to Alabama Code 22-22A-4(f) (1994), and to administer the Alabama Water Pollution Control Act under Alabama Code Sections 22-22-1 through 22-22-14 (1984 and 1988 Cum. Supp.), the purpose of which is: "*...to conserve the waters of the state and to protect, maintain and improve the quality thereof for public water supplies, for the propagation of wildlife, fish and aquatic life and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses; to provide for the prevention, abatement and control of new or existing water pollution; and to cooperate with other agencies of the state, agencies of other states and the federal government in carrying out these objectives*" (Alabama Code Sec. 22-22-2. Since 1990, Congress has annually appropriated grant funds to ADEM under CWA Section 319(h) to help Alabama implement a statewide NPS pollution management program.

Nonpoint source pollution continues to dominate the causes of water quality impairments in Alabama, although NPS funding needs far exceed the resources appropriated under the Section 319(h) grant program. ADEM, as the state lead agency for administration of the Section 319 grant, addresses NPS pollution by leveraging other federal and state resources, supporting networks of community-based actions on a watershed scale, and facilitating statewide regulatory and non-regulatory programs. As a result, the state is experiencing positive results in terms of both on-

the-ground actions and actual water quality improvements. Examples of these improvements are summarized in Section 319 success stories on EPAs website. Most of these successes are the direct result of state resource agency and other public and private sector partnerships and leveraging of resources at the state and local levels. Continued coordination with federal programs such as the USDA "Farm Bill" conservation programs are expected to continue to yield substantial water quality improvements in the future. The ADEM continues to look forward to working with many and varied NPS entities to cooperatively implement a successful statewide NPS management program.

The federal Section 319 nonpoint source grant program is an integral component and funding source of the AL NPS Management Program implementation efforts. Resources provided by Section 319(h) grant funds are administered by ADEM and used to mitigate the causes of NPS pollution and restore impaired waters to meet state water quality standards by:

- Strategically focusing on meeting water quality restoration goals by incrementally addressing priority impaired waters and watersheds
- Clearly articulating NPS programmatic goals and developing annual project workplans that reflect actions to advance or meet those goals
- Reflecting a balance between planning, staffing, statewide action, and project implementation that best utilizes all available resources to deliver measurable water quality improvement results and project outcomes
- Leveraging and integrating other relevant NPS programs by aligning plans, priority-setting and making the best use of available resources to prevent or reduce NPS pollutant runoff
- Tracking and reporting measures, indicators and other outcomes to demonstrate progress and success

Section 319 grant guidelines provide a nationally-consistent framework for obligating Section 319(h) funds to achieve specific statewide NPS programmatic goals, objectives, and milestones presented herein. Section 319 funds are but one component of a broader-based strategy to control a wide range of NPS threats and impairments that adversely impact waters of the state. And, while Section 319 funding is an important NPS program financial resource in Alabama, it is critical that human partnership capital is also maintained and strengthened and new ventures and alliances developed to expeditiously achieve state water quality standards. The effectiveness of the AL NPS Management Program largely depends on leveraging the resources and authorities of a variety of public and private sector entities to meet water quality protection and restoration goals and objectives.

Periodic updating of the AL NPS Management Program helps EPA, ADEM and public and private sector stakeholders identify and set strategic priorities, goals and milestones; work more effectively to address evolving issues, and engage and leverage resources of programs, processes and activities to address statewide and coastal NPS management program priorities. The implementation of annual Section 319 grant workplans correlate with achieving annual programmatic goals and objectives presented herein. To ensure that the AL NPS Management Program remains relevant, ADEM will review and update this document on minimum five year iteration. A major revision is unlikely unless warranted by significant program Section 319 grant guideline changes. Elements that are out-of-date to ensure programmatic goals, objectives, and annual milestones will be updated to reflect more current programs, processes, partners, and resources.

Section 9.1.1 Performance Partnership Grant (PPG)

The ADEM has entered into annual multi-program Performance Partnership Grant (PPG) assistance agreements with EPA Region 4 since 2010. The PPG allows ADEM to combine up to 20 eligible grants, including Clean Water Act Section 319 grants, into one EPA grant funding award. The PPG helps reduce administrative costs by streamlining paperwork and accounting procedures, provides flexibility to direct resources toward the highest priority environmental problems, and supports cross-media approaches or initiatives. Administrative benefits typically include a single grant workplan, budget, performance progress report, and federal financial report. In addition, non-federal cost share may be a composite of cost shares of each grant may be met using any combination of appropriate environmental management funds the state has available.

Workplans are required by 40 CFR 35.107(b) to describe PPG funded outputs and commitments. The ADEM submits information relative to a Section 319 grant workplan in GRTS at a level of detail to ensure that EPA can measure and track program outcomes and outputs. The ADEM is not required to track specific PPG funding expenditures in GRTS; however, Section 319 funds included in a PPG are subject to EPA program reporting,

evaluation, and other accountability requirements contained in Section 319 grant guidelines. The ADEM cooperates with EPA to ensure adequate PPG and Section 319 grant workplan data is tracked and reported.

Section 9.1.2 Relationship to Other Nonpoint Source Water Quality Programs

The ADEM continues to partner with and leverage the resources of a mix of relevant programs to implement the AL NPS Management Program. For example, significant NPS benefits can be realized by combining Section 319 grant resources from EPA with U.S. Department of Agriculture (USDA) conservation cost-share programs and incentives to achieve mutually beneficial water quality protection and restoration goals. This is especially noteworthy in light of the Agricultural Act of 2014 (a.k.a. the "Farm Bill"). The Farm Bill presents a great opportunity to improve water quality in Alabama relative to adverse impacts of agricultural and silvicultural practices. In 2013 and subsequent years, the ADEM partners with the Natural Resources Conservation Service (NRCS) to coordinate efforts to select and monitor National Water Quality Initiative (NWQI) efforts in priority watersheds in Alabama.

Under Section 303(d) of the Clean Water Act, the state (i.e., ADEM) must develop a list of "water quality limited segments" and then develop a Total Daily Maximum Load (TMDLs) for waters that are identified on (biennial) lists. Water quality limited segments are segments where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by CWA Section 301(b) and Section 306. The implementation of pollutant load allocations established by a TMDL is not enforceable under the Clean Water Act for waters impaired solely or partly by nonpoint sources.

The primary implementation mechanism used in Alabama to achieve TMDL pollutant load reductions is NPS resources provided by the Section 319 grant program, coupled with other relevant federal, state, and local resources, programs and authorities. The EPA and ADEM both agree that NPS program implementation should be achieved through development of watershed-based management plans that incorporate TMDL report information and targets TMDL pollutants of concern. The implementation of watershed-based planning continues to be one of EPA and ADEMs highest priorities for the use of Section 319 funds. The ADEM continuously coordinates TMDL, CWA Section 106, and CWA Section 319 nonpoint source programs to align and leverage assessment, planning, and implementation priorities and resources throughout the state.

Resources provided by the Section 319 grant funding will continue to be coordinated with the Clean Water State Revolving Fund (CWSRF) under Title VI of the Clean Water Act (as appropriate, allowable, and practicable). The Section 319 grant program staff works closely with CWSRF staff to achieve, as relevant and practicable, mutual goals and objectives of the AL NPS Management Program and the CWSRF program. The Drinking Water State Revolving Fund (DWSRF) also continues to be leveraged by the Section 319 grant program to protect source waters. The ADEM develops an annual Intended Use Plan (IUP) to indicate that a portion of CWSRF and DWSRF resources may be used to implement specific NPS activities and coordinates those activities within the scope of AL NPS Management Program and Section 319 grant funded project initiatives.

The wide array of ways in which Section 319 funds may be used to support statewide NPS management activities makes them well-suited for coordination and integration with other state and federal resources; especially those limited to a specific implementation of on-the-ground NPS measures and practices such as education and outreach. Planning, design and implementation of water quality programs and projects strive to integrate the authorities and expertise of a wide variety of human financial capital to maximize AL NPS Management Program implementation effectiveness.

Strategic programs and project-level efforts to mitigate the causes of NPS pollution in Alabama include but are not limited to:

- National Pollutant Discharge Elimination System (NPDES) program including General Phase II/MS4 and Construction Stormwater (with respect to urban runoff, construction and development), and animal feeding operations, pesticides, mining, forestry, and Clean Vessel water quality protection programs
- Coastal nonpoint pollution control programs developed under Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990 as required to be implemented through the AL NPS Management Program and as applicable to the Coastal Zone Management Act

- The National Estuary Program (NEP) as authorized under CWA Section 320 including an EPA-approved Comprehensive Conservation and Management Plan (see draft 2013-2018) and an annual workplan (see example: 2013-2014) to address estuarine and coastal watershed challenges
- Wetlands protection and restoration projects implemented under CWA Section 404 as well as Section 401 dredge and fill activities that impact federal and state waters
- Drinking water and Groundwater programs and Underground Injection Control Class V Well programs under Sections 1421, 1428 and 1453 of the Safe Drinking Water Act
- Water Quality Management Planning using Clean Water Act Section 604(b) grant funds and basin planning under Section 303(e)
- Ambient monitoring supported by Clean Water Act Section 106 grant funds in watersheds where NPS impairments and project mitigation to achieve pollutant load reductions are ongoing or may occur
- Environmental regulations and laws for all Alabama waters (e.g. numeric criteria and standards, narrative criteria, waterbody uses, antidegradation requirements, etc.)

Nonpoint source management and water quality programs are also coordinated with several federal resource entities, including but not limited to the: U.S. Environmental Protection Agency (Region 4), U.S. Forest Service, U.S. National Park Service, U.S. Fish and Wildlife, U.S. Geological Survey, National Oceanic and Atmospheric Administration, U.S. Army Corps of Engineers (Mobile District), Federal Energy Regulatory Commission, Tennessee Valley Authority, U.S. Department of Agriculture and others to require implementation of nonpoint source BMPs on federal lands. In addition, the U.S. Department of Transportation and the Federal Emergency Management Agency have policies, practices, and resources to address water quality (and quantity) or influence riparian areas, wetlands, coastal, or other sensitive areas and corridors in Alabama.

Section 9.2 Programmatic and Project-Level Reporting

a) Overview

EPA Region 4 works with ADEM to ensure that appropriate reporting information is incorporated into annual Performance Partnership Grant (PPG) grant and Section 319 grant award conditions. The EPA also conducts mid-year and end-of-year project reviews to evaluate incremental progress toward achieving NPS goals, objectives and milestones. In addition, ADEM collaborates with the EPA Section 319 grant Project Officer in conducting reviews to evaluate grant award accountability and fiscal performance. EPA Region 4 continues to reassess reporting processes to determine if adjustments or modifications are necessary to meet the following CWA Section 319 grant reporting conditions:

- EPA general grant regulations pursuant to 40 CFR parts 31 and 35 which specify broad grant reporting requirements for awarding grants to states and localities. The regulations outline a range of administrative reporting requirements, including performance and financial reports.
- Section 319(h)(10) - authorizes EPA to request information, data and reports as necessary to determine a state's continuing eligibility to receive Section 319 grants.
- Section 319(h)(11) - requires states to report annually on their progress in meeting the schedule of milestones contained in the NPS management program; to report available information on reductions of NPS pollutant loadings, and improvements to water quality resulting from implementation of the NPS management program.

In general, ADEM strives to report sufficient and detailed information to enable the public and private sectors to ascertain whether:

- NPS programmatic goals and milestones are being achieved and are on schedule
- Problems that may emerge relevant to carrying out tasks of a Section 319 grant workplan are promptly and effectively identified and addressed as practicable and as resources allow
- Corrective actions are completed as expeditiously and practicable as resources allow
- Expenditure of federal funds is fiscally responsible and adequately tracked

b) NPS Programmatic Reporting

Information pertaining to annual AL NPS Management Program implementation accomplishments includes, but is not limited to:

- A summary of programmatic progress (e.g. meeting statewide and coastal program goals and objectives)
- Success in meeting program and project-specific milestones

- Projected rate or percent of project completion (e.g. examples provided of BMP implementation and education and outreach activities)
- Obstacles and limitations to effective and expeditious implementation
- The extent to which federal agencies, lands and activities support ADEM and Section 319 grant-funded efforts to implement the AL NPS Management Program
- Resource leveraging and public and private sector partnerships
- The extent of reductions in NPS pollution loadings (e.g. lbs or tons per year) to the extent water quality monitoring data or modeled estimates are available
- A summary of improvements in waters of the state, including but is not limited to:
  - ✓ Progress towards meeting state water quality standards
  - ✓ Reductions in TMDL pollutant of concern loadings
  - ✓ Improving trends in aquatic biology and habitat
  - ✓ Other physical, chemical, and biological indicators and measures of progress

Where NPS pollutant load reduction and water quality improvement information is not available for waters or watersheds where mitigation activities are underway, surrogate measures and indictors may be used to report the degree or percentage of environmental progress, help evaluate the need to modify a strategy, or make better use of limited resources to achieve a positive environmental outcome. The following information may be conveyed on the ADEM website and as a component of an AL NPS Management Program Annual Report:

- Brief case studies of any particularly successful watershed restoration project
- Conveyance of information to increase public awareness and knowledge relative to NPS pollution and water quality protection and restoration
- Public engagement in efforts to address watershed and water quality health
- Products and processes to advance statewide and coastal NPS programs and mutually leverage resources
- Successful efforts to integrate and align Clean Water Act resources with other federal and state programs and resources to better deliver water quality results
- Essential nonpoint partnering efforts

Annual Section 319 grant reports are submitted by ADEM to EPA Region 4 in accordance with Section 319(h)(11). The ADEM also continues to use the EPA-GRTS database as a primary Section 319 program information reporting tool to convey programmatic accomplishments. The information is used to convey annual progress in meeting NPS programmatic goals, objectives and milestones, and to the extent information is available, pollutant load reductions and improvements in water quality. Reporting data and information:

- May be used to summarize each Section 319 grant funded project budget as a component of a final grant closeout report
- Finalize within 90 days following a Section 319 grant award expiration/termination end-date or subgrantee's cooperative agreement end-date
- Is compiled by ADEM for the duration of each multiple year duration Section 319 grant award but reported annually

c) ADEM and Subgrantee Section 319 Reporting

The ADEM strives to ensure that subgrantee Section 319 cooperative agreements and project-specific scope-of services prescribe water quality-based restoration milestones, outcomes/outputs, and reporting is valid, accurate, and relevant. The ADEM stipulates specific reporting obligations in each subgrantee Cooperative Agreement, associated Scope of Services, and project workplan. The ADEM enters the subgrantee's project-specific data to the EPA-STORET water quality database and EPA-GRTS project database, as applicable, to ensure data entry accuracy and reliability. Where a subgrantee provides a portion of the non-federal grant match, ADEM seeks to ensure that adequate records are kept with respect to that portion. The ADEM (as the state's Section 319 grantee) does not impose more burdensome requirements on subgrantees than the Department is subjected to [40 CFR 31.41(a)(2)].

In accordance with 40 C.F.R. Parts 30 and 31, and specifically 40 CFR 31.40(b)(1), ADEM as a Section 319 grantee for Alabama, is required to submit an annual Section 319 grant performance report to EPA. Reporting action items also pertain to Environmental Results Under EPA Assistance Agreements [(EPA ORDER) Classification No.: 5700.7. Sections 8, 9, 10, and 11) (Effective Date: 01/01/2005. Review Date: 01/01/2007)]. Reports are submitted

by ADEM to EPA Region 4 on a semi-annual and annual basis and are publicly available on the ADEM website or by request. Annual Section 319 project workplan performance reports include at a minimum:

- *Milestone summaries*: Major program and project accomplishments for the period including milestones and commitments established by an EPA/ADEM approved workplan, grant agreement, or other relevant grant award terms and conditions
- *Slippage reports*: Reasons provided for problems, delays or adverse conditions relevant to meeting scheduled milestones/commitments and a discussion of the actions (state, federal or other)taken to resolve obstacles in meeting expected outputs/outcomes specified in a request-for-proposal, project workplan or cooperative agreement/contract
- *Additional information* including but not limited to discussions relevant to cost overruns, unanticipated events and their consequences, short-comings or failures, pollutant load reductions and water quality data, partner participation, lessons learned, future resource needs, targeting and mitigation aspirations, etc.

d) Water Quality Protection and Restoration Progress Reporting

In order to demonstrate progress toward meeting annual milestones under Section 319(h) (8), ADEM strives to incorporate reporting strategies that best convey particular water quality protection and restoration mitigation efforts. For example, ADEM uses EPAs Grants Reporting and Tracking System (GRTS) to report implementation of Section 319 grant awards and projects, track pollutant load reduction estimates, report acres of wetlands and feet of riparian areas protected or restored, etc. For fiscal year 2014 and future years, EPA uses a national framework and standardized template for conducting annual performance and progress determinations that encompasses Section 319(h)(8) as well as key information regarding Section 319(h) grant performance more broadly. In addition, the EPA Watershed Assessment, Tracking and Environmental Results (WATERS) Information System combines a variety of water quality information relevant to Section 305(b) Integrated Reports and Section 303(d) impaired waters lists, and provides information to indicate when or if waterbodies meet state water quality standards. Nonpoint source data is also reported in ADEM Field Operations Water Quality Reports, the ADEM ALAWADR database, and input into the EPA STORET database as a component of the ADEM Continuing Planning Process and State of Alabama Water Quality Monitoring Strategy (as updated).

In keeping with EPAs responsibility under Section 319(h)(10) to ensure accountability for the management of Section 319(h) grant funds, EPA is authorized to request certain information to determine continuing grant eligibility and performance. The *Guidance and Checklist for Determining Progress of State NPS Management Programs and Performance of CWA Section 319 Grants* is a critical component of AL NPS Management Program Section 319 grant program efforts to help ensure that the public and private sectors have adequate information to measure and evaluate NPS program implementation performance (see Nonpoint Source Program and Grants Guidelines for States and Territories / Appendix E)

The AL NPS Management Program endorses applicable NPS components of the EPA Healthy Watersheds Initiative (HWI). This federal strategy is used in Alabama to protect healthy watersheds and prevent them from becoming impaired. The national framework and action plan developed as a component of the HWI is designed to meet national objectives protect, restore and maintain the chemical, physical and biological integrity of the nation's waters and aquatic ecosystems. The strategies presented by the HWI complements AL NPS Management Program efforts to ensure Alabama waters continue to meet state water quality standards.

The AL NPS Management and Section 319 grant program reports NPS pollutant load reductions and water quality improvements relative to the Fiscal Year 2014-2018 EPA Strategic Plan (April 10, 2014); achieving 2015 National Water Program Guidance Measures (Goal 2), and reporting requirements under the Government Performance and Reporting Act of 1993 (GPRA). The ADEM reports annually on measures to improve water quality on a watershed basis in GRTS, NPS Annual Reports and commitment targets relative to EPA/ADEM Performance Partnership Agreements.

The AL NPS Management Program and Section 319 grant program maintains partnerships and leverage resources to address the following EPA 2014-2018 Strategic Plan components:

Goal 2:	Clean and Safe Water
Objective 2.2:	Protect Water Quality
Sub-objective 2.2.1:	Improve Water Quality on a Watershed Basis
• SP-10	Full Attainment Measure

- SP-11 Partial Attainment Measure
- SP-12 Watershed-Water Quality Improvement Measure
- WQ-10 Nonpoint Source Partial of Fully Restored Measure
- WQ-9 GRTS Pollutant Load Reduction Measure

Where incremental NPS pollutant load reductions or *in situ* water quality improvement data and information is not yet available for impaired waters and watersheds where BMP implementation is underway, surrogate indicators and measures of progress may be used to inform a broad spectrum of audiences. Data and information to address *Sub-objective 2.2.1,* above may be reported in terms of the degree or percentage of completion of a project and may include but is not limited to:

- Brief case studies of particularly successful efforts to demonstrate that satisfactory and consistent progress is being made (accountability; adaptive management)
- Outcomes (performance in meeting relevant, up-to-date and trackable schedule of milestones)
- Alignment and integration of financial and human capital to achieve measures listed above (e.g. leveraging funds, resources and authorities of a wide variety or public and private sector entities)
- Significant slippage issues and concerns, recommendations for corrective actions, and lessons learned

Section 9.3 Grants Reporting and Tracking System (GRTS)

The Grants Reporting and Tracking System (GRTS) database is a documentation vehicle used by EPA to assess performance and accountability for projects funded under Section 319(h) grants. It is also the primary reporting vehicle used by ADEM to fulfill certain EPA Section 319 grant award and Section 319 guideline reporting requirements. In addition, it is used by Congress, the Office of Management and Budget, the Government Accountability Office; state NPS program staff, nonprofit organizations, the public, and other federal, state and local agencies as a tool to track Section 319 program activities and information, enhance the understanding of NPS projects and programs, ensure program accountability and heighten transparency of the funds being awarded and leveraged, and as an indicator of program successes. The EPA requires all states to use the GRTS database to report nationally mandated project elements as outlined in GRTS guidance. The ADEM may also input data into non-mandated fields. The required level of detail allows EPA Region 4 to measure and track Section 319 grant funded project outcomes and outputs. The EPA ensures that GRTS financial information reported by ADEM (and other states) is consistent with relevant Performance Partnership Grants (PPG) regulations.

The ADEM updates Section 319 project nonpoint source pollutant load reductions (i.e., nitrogen, phosphorus, and sediment) in the GRTS database by February 15, annually. To ensure that the state meets Section 319 grant guideline reporting requirements, ADEM enters mandated elements into GRTS, including geolocational tags where available, for applicable projects funded by a previous Section 319 grant award. Section 319 grant project-specific data is entered as project implementation proceeds and upon grant award and project close-out.

To encourage leveraging of CWSRF and other state and local funding sources, Section 319 guidelines provide an exemption to the 50% watershed project funding requirement for states that invest substantial non-federal funding (i.e., twice the total amount of the state's Section 319 watershed project funds) towards watershed project implementation. As relevant, ADEM will convey to EPA that non-federal funding match is at least equivalent to the state's total federal Section 319 grant allocation, targets implementation of a watershed-based plan, and outputs align with relevant goals and objectives of the AL NPS Management Program. The ADEM will indicate the 50% exemption in an applicable Section 319 grant funded project workplan and in the GRTS database.

The ADEM will continue to use Section 319(h) grant funding to ensure that sufficient resources are available to meet reporting requirements of Section 319(h) (11). Examples of GRTS support include funding for ADEM NPS staff; equipment, materials and supplies, and attendance at GRTS workshops and training events. GRTS-related activities funded by Section 319 are program fund action items and not counted toward the 10% cap on administrative costs.

Section 9.4 Program Assessment Indices

a) Overview

Federal, state, and local NPS pollution management actions are often intricately intertwined; and therefore, an assessment AL NPS Management Program and Section 319 grant success should be evaluated in the aggregate. The ADEM continues to collaborate with many and varied public and private sectors to identify, establish, and integrate systems, programs, and processes to implement NPS programmatic goals and objectives and expeditiously achieve annual milestones. Programmatic and Section 319 grant program success measures generally parallel applicable national NPS strategic goals expressed by EPA 2011-2015 Strategic Plan priorities and EPA National Water Program Guidance Measures (e.g. SP-10, SP-11, SP-12, and WQ-10) as updated in the Fiscal Year 2014-2018 EPA Strategic Plan (April 10, 2014) and 2015 National Water Program Guidance Measures (Goal 2). It is important to note that investments of human and financial capital in one particular fiscal year may not produce NPS programmatic results until years in the future. This is primarily a reflection of the natural lengthy (3-5, 5-10, or more years) lag times between measure/practice implementation and expected ecological change / water quality improvement results.

The ADEM continues to align the goals and objectives of the Section grant program with the AL NPS Management Program to address current and future watershed health and water quality protection and restoration issues and challenges. Evaluation indices used to elicit and capture implementation success may include but is not limited to:

b) External NPS Program Evaluation Indices (Public and Private Sector Metrics)

- An inclusive mix of relevant partners
- Availability, leveraging and targeting of a mix of NPS financial resources (other than Section 319 grant funds)
- Environmental monitoring data presented to the public that identifies water quality and human health threats and impairments (e.g. Section 303(d), 305(b) and 314 reports, listings and decision documentation)
- Meeting Performance Partnership Grants (PPG) commitments, targets, and goals (incremental, final)
- Progressively addressing NPS impaired waters and protecting special, outstanding, and public water supply waters on a watershed basis
- Removing impaired waters from the Section 303(d) lists as a result of water quality improvements (as opposed to a delisting as a result of the development of a TMDL)
- Integration and consistency of the Coastal NPS Programs with the statewide AL NPS Management Program
- Public feedback (e.g., Alabama Clean Water Partnership; Annual NPS Conference, other NPS education and outreach, training, meetings and surveys)
- Coordination and leveraging of relevant NPS partner resources to mitigate ecological stressors and risks that threatens or impairs human health and ecosystem integrity
- Linking programmatic (e.g., groundwater, drinking water /wellhead protection; natural resources inventories, water quality monitoring and assessments, etc.) with Section 319 grant project-level goals, objectives, and annual milestones
- Regulatory compliance and citizen complaint resolution approaches
- Updating the AL NPS Management Program goals and objectives (a minimum of every 5 years) and milestones (at least annually) so that they remain relative, current and oriented to expeditiously meeting and sustaining state water quality standards and beneficial uses

c) Internal NPS Program Evaluation Indices (ADEM)

The ADEM continues to seek ways to identify and enhance intra-Departmental processes and systems to improve AL NPS Management Program and Section 319 program implementation progress. These efforts may include but are not limited to:

- Entering data into EPA STORET/WQX water quality and Grants Reporting and Tracking System (GRTS) databases
- Tracking and reporting state progress in achieving EPA 2011-2015 Strategic Plan priorities and EPA National Water Program Guidance Measures (e.g. SP-10, SP-11, SP-12, and WQ-10) and as updated in the Fiscal Year 2014-2018 EPA Strategic Plan.
- Development, coordination and integration of annual water quality monitoring goals and milestones relative to project prioritization, alternatives, and resource availability and commitments
- Reporting PPG assistance agreement commitments to EPA Region 4 (annual)
- Development of an Annual NPS / Section 319 Program Report to document sustained progress toward meeting programmatic goals and objectives

- Planning, implementation, tracking and reporting of annual Section 319 project-level goals, objectives and milestones
- Developing annual Section 319 and other Request-for-Proposals relative to mitigating nonpoint sources
- Efficiencies and improvements in NPS georeferencing, geospatial data, and other electronic technologies
- Updating and streamlining Section 319 grant and project-specific tracking metrics, systems, and formats
- Ensuring fiscal accountability (e.g. communicating, coordinating funding, resources, and cooperative agreements between the NPS Unit, Field Operations, Water, and other Divisions within ADEM)
- Conducting annual intra-agency planning meetings to prevent wasteful expenditure of very limited human and financial capital and to avoid duplication of efforts (e.g., including NPS Unit, Water Division, Field Operations and Coastal Program staff)

Section 9.5 Section 319 Grant Implementation Processes

a) Adaptive Management

Section 319(h) (8) requires EPA to determine if Alabama is making satisfactory progress implementing its NPS management program. The ADEM strives to take adaptive corrective actions to ensure AL NPS Management Program goals, objectives, and milestones are achieved as effectively, efficiently, and expeditiously as possible and as resources allow. Policies, strategies, and metrics may address specific opportunities, needs, issues, or problems and may be initiated in partnership with one or more public and private sector entities. Efforts are made to ensure that adaptive nonpoint source mitigation measures designed to prevent, protect, and restore environmental and human health conditions are practicable, fiscally responsible, and quantitative. If evaluations by EPA (and the general public) suggest that insufficient progress is being made by ADEM to meet NPS programmatic goals, objectives and milestones, ADEM will work with relevant public and private sectors to identify and integrate appropriate corrective actions through entities such as the Alabama Clean Water Partnership. The ADEM also continues to work with EPA to develop and implement strategies that best measure the effectiveness of multiple programs and projects over time (i.e. quantitative and qualitative trends).

Adaptive management decisions are generally necessitated in Alabama relative to anthropogenic land disturbance activities, natural geophysical processes and weather impacts; socio-economic and cultural conditions and obstacles; agency priorities, resources and authorities; grant conditions; human and financial capital; improvements in water quality monitoring data; new or improved standards, practices and technologies, and watershed-based management plan updating. Adaptive NPS management decisions are implemented at varying temporal and spatial levels. Measures and practices to modify certain behaviors to control nonpoint sources should continue to be based upon sound science. Resources should be coordinated through established forums whenever and wherever practicable since a holistic approach is the most efficient, effective and economical way to identify, quantify, and mitigate NPS watershed and water quality issues and concerns.

The Performance Partnership Grant (PPG) and Section 319 grant funded workplan may utilize an adaptive management approach to achieve their commitments with prescribed timelines. It is recognized that some adaptive solutions may require long-term implementation and maintenance commitments and resources, i.e., success measures, indices and endpoints may extend beyond a 5-year AL NPS Management Program, PPG, Section 319 grant award, or project-level timeline or updating cycle. It is also acknowledged that, for any particular point in time, it may be difficult to demonstrate that PPG and Section 319 grant funded efforts are consistently achieving applicable project goals, objectives, and outcome expectations. For example, there can be extended lag times between the time a BMP (or set of BMPs) is implemented and when an environmental/water quality improvement result becomes apparent (or measurable). Similarly, even when a desired result is observed, it may be problematical to try to link a particular result to a particular BMP, particularly when treating larger scope and scale geographical / watershed land surface areas. In these instances, long-term watershed health and water quality monitoring and assessment trend data are critical measures of progress and success.

b) Waiver Process

Circumstances may arise in which ADEM may submit a Section 319 grant project workplan to EPA for a particular year that does not fully meet all requirements specified in Section 319 grant guidelines. If circumstances justify a waiver from one or more requirements in the guidelines, the Director of ADEM may request a waiver of such requirements to the EPA Region 4 Water Division Director. The waiver request will at a minimum:

- Identify the grant guideline or workplan requirement from which the waiver is requested
- Explain the conditions and circumstances that necessitated a request for a waiver
- Explain why a timely waiver is necessary to effectively, expeditiously and economically achieve the goals and objectives or the AL NPS Management Program
- Describe the measures, practices, and other activities that will be implemented
- Commit to adhere to relevant Section 319 grant guidelines and workplan requirements to the greatest extent possible

The Section 319 grant guideline waiver provision is used by ADEM only in unusual circumstances. For example, ADEM may request alternatives if annual national funding levels to the state are substantially reduced by EPA at any time or if a waiver is expected to result in more expeditious or substantially increased environmental and human health protection and socio-economic / quality-of-life benefits due to unknown or unforeseen national and/or state urgent situations, disasters, and tragedies. The waiver request will apply only to Section 319 grant funding and guidelines. It will not apply to Federal and state statutory or regulatory requirements or to EPA orders or policies as referenced in Section 319 grant guidelines.

c) Program Document Reviews and Revisions:

This AL NPS Management Program document is updated at a minimum every five years, beginning calendar year 2014. Major NPS pollution categories or any component of the document may be revised / modified in the interim based on critical changes in Federal and state authorities, rules, laws and regulations; new or revised Section 319 grant guidelines, orders, and policies; or other issues that may significantly impact programmatic goal and objective implementation efficiency and efficacy. The timeframe for the public to provide input and suggestions for enhancing this document is open-ended. The public is encouraged to submit comments directly to ADEM for consideration relative to functional, scientific, education, administrative and accountability merit.

The NPS Management Program document development, review and approval process generally proceeds as follows:

- ADEM staff develops a draft "working" document
- The draft document is sent by ADEM to EPA Region 4 nonpoint soured program staff for initial review and comments relative to scope, expectations, appropriateness, approaches, etc. EPA Region 4 reviews the Draft document and may forward a copy to EPA Headquarters (HQ) for comments.
- EPA Region 4 (and EPA-HQ) reviews draft documents in accordance with the suggested outline for assessments of State programs provided in Appendix A of the Section 319 program guidelines. EPA Region 4 and EPA HQ may issue a unified set of concerns, strengths, and suggestions (if any) ADEM should incorporate to improve the draft document. EPA Region 4 issues an official review letter and forwards it to ADEM. There may be informal communications between the State and EPA Region 4 nonpoint source program staff regarding clarification of issues or requests for additional information during this time.
- ADEM responds to EPAs draft review comments and incorporates applicable responses into a final draft or final document.
- The final draft or final document is presented for public review and comment on the ADEM website. ADEM responds to relevant public input and may incorporate comments based upon merit and applicability.
- The ADEM Director provides notice of the completion of the final AL NPS Management Program document to the EPA Regional Administrator and to EPA Headquarters - Director of the Assessment and Watershed Protection Division.
- The EPA Regional Administrator in concurrence with the EPA Assistant Administrator for Water approves the final AL NPS Management Program document.
- The EPA Region 4 office officially notifies ADEM that it has approved the NPS Management Program upgrade [e.g. determination of satisfactory progress under CWA Section 319(h) (8)].
- The ADEM continues to be eligible for award of CWA Section 319 nonpoint source grant funds as grant conditions and guidelines continue to be met in subsequent years.

d) Accountability and Transparency

The public and private sectors are best served by providing relevant and ample opportunities to review NPS program planning and implementation activities - especially when public funding sources are expended. This not only helps to ensure that limited human financial capital is well-targeted and sustainable, but promotes stakeholder buy-in which is critical to developing and sustaining long-term partnerships, other commitments, and successful program

implementation. The ADEM continues to periodically review, evaluate, and report on NPS management program progress using environmental and programmatic indicators and measures of success (see Chapter 8: Table 8.8**)**.

The ADEM utilizes appropriate programmatic and financial systems to ensure Section 319 dollars are used in a fiscally prudent manner and consistently meets legal requirements and obligations. The ADEM also strives to ensure that Section 319 grant funds complement and leverages technical assistance, education, management measure, and financial capital from a mix of federal and non-federal sources. In addition, ADEM strives to ensure that public and private resources that leverage Section 319 grant funds meet statutory, regulatory and other administrative criteria consistent with applicable provisions of CWA Section 319, CWA Section 319 grant guidelines, Applying for and Administering CWA Section 319 Grants, EPA general grant regulations in 40 CFR parts 31 and 35, relevant EPA Orders and Policies, and OMB circulars.

The ADEM reports financial and programmatic information to EPA Region 4 relative to the annual EPA/ADEM Performance Partnership Grant (PPG) assistance agreement and associated Section 319 grant funded workplan projects. While it may be reasonable to assume that a PPG or project-level goal, objective or milestone is significant, the term is relative to the circumstances affecting it. For example, overall PPG and Section 319 workplan and specific project-level outputs and outcomes may be long-term, shorter-term, and measured incrementally relative to where, when and how they occur and/or measures are installed to mitigate impacts and protect and restore water quality.

To promote NPS program implementation accountability and transparency, ADEM strives to ensure the public is aware and has access to Section 319 grant data and information as required by the EPA Grants Reporting and Tracking System (GRTS) database; Section 319 watershed-based management plans and annual project implementation workplans; and AL Nonpoint Source Program Annual Reports. Information may include how, where, and for what management measures, practices and activities the taxpayer's money is, has been, or will be expended on. Mechanisms to express NPS program statutory and regulatory requirements, solicit voluntary input, and enhance public awareness and knowledge include but are not limited to:

- Alabama NPS Cooperators Conference (annual)
- NPS "major pollution category" public meetings (e.g. agriculture, silviculture, urban/construction, resource extraction, hydromodification, etc.)
- Watershed project meetings (Section 319 project facilitator-led)
- Alabama Clean Water Partnership quarterly meetings and Annual Conference
- District Conservation Advisory Committee meetings
- USDA Farm Bill programs (e.g. NWQI) and other state conservation/natural resource agency coordination
- State Technical Committee (annual and sub-committees)
- Electronic media (e.g. e-mail , citizen compliant and resolution system, public mass-media outlets)
- Pollutant discharge permitting processes and programs
- TMDL development and approval processes
- Coastal zone nonpoint sources control programs
- As other public and private sector interaction opportunities emerge

The EPA Region-4 grant project officer for Alabama is largely responsible for reviewing the AL NPS Management Program document and approving annual Section 319 grant workplans. The ADEM NPS Unit regularly communicates with the EPA project officer. This cooperative effort enhances programmatic and project-level progress and seeks to increase the likelihood of meeting agreed-upon NPS program goals, objectives and annual milestones. Satisfactory explanations are provided by ADEM if program and project-level expectations are not achieved. Fiscal data is tracked in specific ADEM Fiscal Office and NPS Unit Section 319 grant and project-specific databases.

Section 9.6 Eligible Section 319 Grant Funding Activities

a) Overview

The AL NPS Management Program strongly supports the targeting of Section 319 funds to develop and implement watershed-based plans designed to restore impaired waters. Section 319 grant guidelines require states to set aside at least 50% of their Section 319 grant funds to implement watershed-based projects. The set-aside is referred to as

Watershed Project Funds. The ADEM uses the remaining 50% of the Section 319 funds, referred to as **NPS Program Funds**, for a range of activities to achieve the goals and objectives of the AL NPS Management Program. The ADEM generally targets all NPS *program funds* to ADEMs NPS priorities (e.g. staff, water quality monitoring) and selected subgrantee activities (e.g. education and outreach, watershed plan development, other planning).

b) Nonpoint Source Program Fund Targeting

- Achieve NPS programmatic goals and objectives, strategies and milestones expressed in this AL NPS Management Program (see Chapter 8) or as updated in future years
- Support ADEM NPS program staff (e.g. grant administration and watershed project management)
- Technical assistance, financial assistance, education, training, technology transfer, and demonstration projects
- Eligible NPS water quality monitoring as conducted by ADEM
- Water quality data analyses, evaluation and reporting by ADEM staff (STORET, ADEM databases)
- Source water assessments and groundwater/drinking water source protection (SRF) from nonpoint sources
- Protection of unimpaired/high quality waters designated as outstanding national and state or treasured waters
- EPA Healthy Watersheds Initiative assessments, actions, and leveraging of other sources of funds for watershed protection
- Develop, implement, and update/revise watershed-based NPS management plans (or EPA-acceptable "alternative" watershed restoration plans) in accordance with Section 319 grant guidelines
- Revisions and updates to this AL NPS Management Program document
- Gather relevant data and information to develop or implement NPS components of mixed-source TMDLs (although allowable by grant guidelines, ADEM does not use Section 319 grant funding to *develop* TMDLs)
- CZARA 6217 and Section 319 coordination and planning, addressing coastal Nonpoint Program full approval, water quality monitoring, and implementation and tracking and assessing coastal NPS management measures
- Tracking and reporting federal grant award commitments and obligations (PPG and CWA Section 319)
- Tracking and reporting program and watershed project status and successes (GRTS and ADEM NPS Annual Reports)
- Nonpoint source office and staff support such as supplies, equipment, travel, indirect, fringe, rentals, etc.,
- Attending and facilitating public and private sector NPS meetings and events (e.g. Annual NPS Conference) including space, light refreshments and/or meals as defined by the U.S. General Services Administration and similar services conducted only during normal business hours.(per 41 CFR 301-74.11)
- Coordinate a mix of non-regulatory (voluntary) and regulatory (enforcement) programs and projects to achieve NPS pollutant load reductions, protect and restore water quality, and meet state water quality standards

c) Nonpoint Source Program Funding Priorities Include But are not Limited to the Following

- Provide adequate financial support for ADEM staff to administer and manage a successful statewide NPS program (e.g. workplan management deliverables, costs reimbursements, plan development and updates, program and project-specific reporting, responding to requests for information, etc.)
- Develop, implement, and revise as applicable, an EPA defined 9-key element watershed-based plan or an EPA approvable, alternative water quality protection and restoration plans
- Restore and protect all types of public surface waters acknowledged in Section 305(b) Integrated Reports, identified as impaired on Section 303(d) Lists or as documented in various ADEM Water Quality Reports
- Protect groundwaters and drinking water resources as listed or documented in the Section 305(b) Integrated Report, the state's groundwater protection program or wellhead protection / source water /drinking water protection programs
- Eligible activities under Section 314 (Clean Lakes) of the Clean Water Act that integrates lakes water quality monitoring, assessment and protection activities with this AL NPS Management Program, Section 319 grant program, Coastal Zone Management programs, and/or human health protection
- Maximizing state flexibility to consider and prioritize all causes and impacts of NPS pollution to state waters such as lakes and reservoirs, wetlands, estuaries, and other sensitive ecosystems including aquatic habitats.
- Source water protection including NPS program / Section 319 coordination with the SRF loan program
- CZARA 6217 program planning and implementation and Coastal Nonpoint Control Program final approval and sustained implementation of coastal management program projects
- Selection and monitoring of priority USDA-NRCS National Water Quality Initiative watershed projects

- Integrate ambient water quality monitoring and assessment efforts to document and prioritize waters of the state; restore NPS impaired waters; protect high quality waters from NPS pollution threats; develop, improve, and evaluate metrics, processes, and tools; identify and assess long-term trends; and/or evaluate ecological conditions and aquatic habitats
- Manage data and information including electronic and GIS-based mapping and storage and retrieval processes
- Input mandated Section 319 grant funded project elements into EPAs GRTS database
- Sustain cooperative partnerships including continuing to establish and implement MOAs/MOUs (see Appendix F: Table F.8)
- Integrate and leverage NPS financial resources of many and varied public and private resources (real dollars and/or in-kind services)
- Coordinate NPS management measure planning, implementation, and maintenance strategies and action items
- Facilitate and attend NPS watershed and water quality based education and outreach, technology transfer, and technical assistance training and delivery events
- Facilitate conferences, meetings, workshops, advisory groups, committees, and other partnership events such as those entities affiliated with the Alabama Clean Water Partnership
- Provide resources for statewide, river basin, watershed, and localized project-level cooperators and facilitators
- Enhance public and private sector NPS cooperation, coordination, collaboration and communication

d) Watershed Project Funds and Priorities

- A primary focus of both EPA and ADEM is to restore NPS impaired waters
- At least 50% of annual appropriation of Section 319 grant funds (watershed project funds) are targeted by ADEM to implement watershed-based projects guided by EPA-defined 9-key element watershed-based plans
- Resources are provided for eligible activities aimed at implementing, in whole or components thereof, a NPS watershed-based management plan or EPA-acceptable alternative water quality-based restoration plan
- BMPs are implemented in priority watersheds containing one or more Section 303(d) listed impaired waters or segments
- High quality waters are protected (based upon prior ADEM/EPA Section 319 grant workplan consultations)
- Assessment of USDA-NRCS National Water Quality Initiative watershed project success
- Urban stormwater runoff activities that do not directly implement a final NPDES permit (**see** Appendix C: Urban Development and Construction)

Watershed project funds are not used for planning activities such as developing watershed-based plans or TMDLs. However, as part of a Section 319-funded project to implement an existing completed watershed-based plan whose technical analyses may need minor updates; EPA Region 4 and ADEM may allow stakeholders to use a very limited amount of watershed project funds to support necessary technical revisions (e.g., updates to watershed plans to account for changes in land use) as part of a project to implement that watershed-based plan. In these instances, watershed project funds will not be used to conduct other planning work related to the watershed-based plan such as general updates to the plan, soliciting public comment, etc.

e) Watershed Project Funding and NPS Staff Activities

Section 319 grant watershed project funds are used by NPS project staff directly implementing a watershed-based plan or EPA-acceptable alternative watershed plan. As watershed project implementation is, for the most part, a locally-driven and managed process, the majority of NPS staff supported with watershed project funds are locally contracted watershed project coordinators; however, to the extent that ADEM staff plays a direct role in implementing watershed management projects, those staff activities are eligible for Section 319 watershed project funds. ADEM staff time expended in providing local watershed project oversight (e.g., reviewing subgrantee workplans and progress reports, tracking project deliverables, etc.) or statewide NPS activities (e.g., holistic NPS program coordination, education and outreach, water quality monitoring, etc.) is not eligible for watershed project funding, but instead, is supported using Section 319 NPS program funds.

The expenditure of Section 319 grant watershed project funds may include but not limited to the following activities:

1. Prioritizing and Implementing NPS Management Measures and Practices:

a) Fund local staff watershed project coordinator or facilitator or employ specialized expertise needed to plan, design, demonstrate, implement, retrofit, or maintain NPS management measures

b) Implement a local cost share program to fund BMPs in critical areas described in a watershed-based management plan or an EPA-acceptable alternative water quality restoration plan.
c) Provide one-on-one technical assistance to confirm landowner participation in watershed project(s)
d) Identify, design and select which BMP or suite of BMPs are most appropriate to achieve water quality targets articulated in a watershed-based plan or an acceptable alternative watershed plan
e) Leverage resources to implement the most appropriate management measure or suite of measures for an impaired site, watershed, or community-based initiative
f) Provide estimates of priority Section 319 grant guideline pollutant load reductions
g) Develop, implement, and assess BMP implementation effectiveness metrics, measures and indicators
h) Track and document progress towards meeting water quality targets expressed in a watershed-based plan or an acceptable alternative plan

2. Implementation of Watershed-based Management Plans:
a) Coordinate the efforts of key partners addressing NPS pollution treats and problems
b) Leverage and target other federal and state NPS resources with Section 319 grant resources
c) Facilitate the delivery of targeted local education and outreach events (i.e. technology transfer; demonstration project field days, tours and workshops) that promote a voluntary approach to implementation of BMPs
d) Provide technical assistance to facilitate the implementation of a water quality restoration or protection project
e) Providing oversight for implementation of a Section 319 workplan and associated contractual services, project outputs/deliverables, budgets / reimbursements, watershed plan modifications/updates, and required reporting
f) Collection of water quality data to help the public and private sectors evaluate the effectiveness of on-the-ground management measures or to meet other watershed-based plan project goals and objectives
g) Reporting and distribution of valid science-based watershed health and water quality restoration data regardless of the entity collecting the data and if it's a component of a watershed-based plan or acceptable alternative plan
h) Monitor water quality results in NWQI watersheds including sites where a watershed-based plan has not been developed

All Section 319 staff fundable activities are contingent on the approval of NPS project proposals submitted to EPA in an annual ADEM Section 319 grant workplan. Workplans describe how staff intends to implement NPS watershed based strategies and action items geared toward expeditiously achieving water quality results.

f) Project Solicitation

The ADEM submits a Section 319 Request for Proposal (RFP) annually in the state's major newspapers several months prior to the state's Section 319 grant award / fiscal year begin date (October 1). The ADEM website and various conferences, meetings, partnership lists, and personal contacts are also used to convey the RFP announcement. This public notice process helps to ensure that NPS project proposals and watershed-based management plans are developed and submitted to ADEM in advance of the grant award date. The RFP references the AL NPS Management Program and Section 319 grant guidelines so that proposals are focused on and consistent with relevant programmatic goals and objectives. Communication with the public and private sectors throughout the year helps to proactively negate potential application process and submittal issues. The ADEM NPS Unit staff reviews all proposals to ascertain appropriateness and fundability and provides comments as needed. After ADEM selects a workplan for funding, the proposer is notified and a Cooperative Agreement (state contract) with a project-specific Scope-of Services attachment is initiated using established State of Alabama and ADEM fiscal and project tracking and management processes.

g) Section 319 Workplans

The annual Section 319 grant workplan submitted by ADEM to EPA Region 4 is designed to achieve the goals and objectives, strategies and milestones (see Chapter 8) of the AL NPS Management Program. Specific workplan project activities link to Annual Milestones that are also submitted to EPA Region 4 annually. Each project that makes up the Annual Workplan includes a Project Abstract summarizing the relationship between Section 319 funds and expected water quality improvement.

A Project Abstract generally includes the following information:
- ADEM-specified Project Number and Title of Project
- Primary Lead Entity and local Project Contact Information

- Executive Summary (targeted waters/waterbodies; project scope and scale; NPS problems to be addressed, significance, etc.,)
- Goals
- Objectives
- Methods (types of BMPs and strategies to implement structural and nonstructural BMPs)
- Outputs
- Milestone schedule
- Environmental outcomes, performance measures and indicators
- Budget

Annual Workplans include the same information as Project Abstracts but in much greater detail. Workplan information provides, but is not limited to: descriptions of staff roles and responsibilities, relationships and links to the AL NPS Management Program, an implementation milestone schedule; project tracking information applicable to the GRTS database, detailed budget, indicators and performance measures to evaluate incremental progress and final project success; targeted watershed map, BMPs and site descriptions and/or photos; water quality impairment conditions, and improvement expectations. Outputs and outcomes are expressed in adequate detail to ensure success and enhance accountability. Outputs are quantified whenever practicable (e.g., number and types of on-the-ground BMPs; pollutant load reduction estimates, etc.) and are linked to water quality improvement outcomes.

Alabama's Section 319 grant workplan budget is included as a component of an annual Performance Partnership Grant (PPG). The PPG also contains overall multi-environmental media (air, land and water) commitments the ADEM will address annually, including nonpoint sources. The annual Section 319 Workplan describes in much greater detail, project-specific goals, objectives, and outcomes and outputs; however, the annual Workplan may not be submitted concurrently with an annual PPG, nor is the Workplan necessarily in "lock-step" with other media / program funding and commitments. This is because the PPG is an annual grant award funded on an annual basis. Funds awarded through a Section 319 grant award may be expended to implement Annual Workplan projects over a 5-year period. No-cost time extensions to a PPG is requested annually by ADEM to EPA Region 4 to extend the PPG fiscal end date to compensate for 5-year Section 319 project implementation needs. The EPA Region 4 ensures that the Section 319 grant workplan adheres to relevant EPA policies, including EPA Order 5700.7, *Environmental Results Under Assistance Agreements*, GPI 11-03, *State Grant Workplans and Progress Reports*, and GPI 12-06, *Timely Obligation, Award and Expenditure of EPA Grant Funds*.

h) Nonpoint Source Program Proposal Review and Selection Criteria

Section 319 project review and selection criteria ensure that workplan proposals are well-designed and possess the capacity to delivery NPS pollutant load reductions and improve water quality. Proposals are generally reviewed, selected, and funded relative to criteria presented below in Table 9.6.h.

Table 9.6.h Matrix for Review, Selection, and Funding of Section 319 Program Fund Proposals

Criteria	Yes	No	Comments
Project Scope is Reasonable, Justifiable, and Fundable			
Targets the Goals and Objectives of the AL NPS Management Program			
Targets Priority NPS Water Quality Issues (Section 19 grant guideline priority pollutant load reductions and TMDL pollutants of concern)			
Leverages Other Federal, State, or Community-based Resources (other than Section 319 grant funding)			
Facilitates Implementation of Economically Sensible Water Quality Restoration BMPs			
Water Quality/Watershed Restoration Success is Likely (a potential Section 319 success story)			
Identifies Qualitative and/or Quantitative Measurable Outcomes			
Ensures Efficient, Effective, Reasonable and Justifiable Targeting of Both Federal and Nonfederal Funds			
Nonfederal Project Match is Adequate (e.g. 40% real or in-kind for the Section 319 grant award)			
Establishes or Enhances Public and Private Sector Partnering and Resource			

Leveraging Opportunities			
Coordinated with other Environmental Media Programs (e.g. air, land, water categories) including SRF			
Includes Project Evaluation Components (success measures and indicators, outputs, outcomes, documentation/reporting elements, appropriate monitoring and assessment, lessons learned)			
Enhances Public and Private Sector Knowledge and Awareness (education and outreach, training, technology transfer; shares lessons learned)			

i) Nonpoint Source Watershed-based Project Review and Selection Criteria

Table 9.6.i Matrix for Review, Selection, and Funding of Section 319 Grant Proposals

	Criteria	Aimed at Developing a Watershed-based Plan	Aimed at Restoring Impaired Waters to Achieve NPS Pollutant Load Reductions	Aimed at Protecting Designated Special and Outstanding Alabama Waters
1	The watershed is identified as a NPS Management Program priority. • The proposed project will help the state achieve goals, objectives and milestones presented in the AL NPS Management Program.			
2	The watershed/waterbody has a completed TMDL. • The watershed-based plan takes advantage of watershed information already gathered during TMDL development (e.g., modeling).			
3	The costs associated with delivering project products are the most efficient and effective use of funds. • Project costs justify the degree to which the products from this project will address the demonstrated water quality need.			
4	The goals and measurable outcomes of the project are clearly articulated. • The goals/outcomes address a justifiable water quality need.			
5	The project addresses an AL NPS Management Program priority (e.g., pollutant source or basin/watershed) • The project targets strategies and action items designed to implement Section 319 grant funded 319 projects.			
6	An EPA defined 9-key element watershed-based plan (in accordance with elements (a) through (i), as outlined in EPAs 319 grant guidelines) has been developed for the watershed. • The project will implement a high priority recommendation from that plan.			
7	The project sponsor demonstrates sufficient local support for the 319 project (e.g., through required match, letters of support from a local stakeholder group, etc.).			
8	The waterbody is listed as impaired according to the state's CWA Section 305(b) list of impaired waters.			
9	The project addresses a high priority watershed.			
10	If the project has an information/education component, the sponsor has clearly identified the targeted audience and the behavioral changes it hopes will result from the project. • The sponsor has included an evaluation mechanism for the information/education activities to determine if they were effective.			
11	If funding is for an additional phase to a project, success of the initial project phase(s) has been demonstrated. Initial project phase(s) produced the desired outcomes. • The project sponsor can document other measures of success.			

12	If water quality monitoring is requested to evaluate restoration success, the project sponsor can provide evidence that re-evaluation is warranted due to previous restoration efforts (e.g. evidence supporting improving water quality trends or documentation that the majority of their watershed-based plan has been implemented).			
13	Monitoring objectives are clearly identified. The monitoring strategy to be employed will achieve those objectives.			
14	The proposed project is consistent with the AL NPS Management program water quality protection strategies.			
15	The project addresses a high priority protection recommendation in a priority watershed.			
16	A watershed-based plan has been developed. • This project is a high priority recommendation from the plan. • Note: There may be select scenarios, such as an implementation project aimed at protecting unimpaired waters, in which an EPA-defined 9-key element watershed based plan or a NWQI project is not required to guide project implementation.			

j) Section 319 Financial Oversight

In accordance with Section 319(b) (6), ADEM obligates Section 319 funds within 1-year of the date the grant is awarded from EPA Region 4. Obligation does not mean "to expend." Rather, obligation is when the state creates a definite liability against the Section 319 grant award (i.e., ADEM executes an official, signed Cooperative Agreement with subgrantees). The 1-year obligation time line does not apply to ADEM staffing, project oversight or other ADEM expenses charged to the grant (e.g. monitoring and assessment) because the drawdown period for some projects extend over a 5-year period.

Pursuant to Section 319(h)(3), "*The federal share of the cost of each management program implemented with federal assistance …in any fiscal year shall not exceed 60 percent of the cost incurred by the state in implementing such management program and shall be made on the condition that the non-federal share is provided from non-federal sources*." The non-federal grant match requirement applies to the whole Section 319 grant and may not be contributed at the time of grant award submittal, but is reconciled by the ADEM Fiscal Office at the Performance Partnership Grant (PPG) closeout end-date. As a PPG state, Section 319 nonfederal grant match may be provided by a mix or ADEM environmental programs. The cost-share attributable to the Section 319 funds included in a PPG is either the amount of funding required to meet the Section 319 match requirement or the amount of funding required to meet the maintenance of effort requirement, whichever is greater (40 CFR 31.136). Project-level non-federal match is contributed by project cooperators established in the workplan. include costs borne by nonfederal grants or by cash donations from nonfederal third parties.

40 CFR Section 31.41(b) requires ADEM to report the status of funds under each grant by submitting federal financial reports using Standard Form 425 or 425 (a). At a minimum, the ADEM Fiscal Office submits PPG financial reports to EPA Region 4 on an annual basis and/or within 90 days after the expiration or termination of the EPA/ADEM grant funding assistance agreement pursuant to 40 CFR Part 31.

Section 319(h)(9) requires the state to establish and maintain an annual aggregate annual level of state NPS pollution control expenditures for improving water quality at an average "Maintenance of Effort" (MOE) level of expenditures (based on fiscal years 1985 and 1986). Certification is submitted annually by the ADEM Fiscal Office to EPA Region 4 as a component of a federal financial report (FFR).

Clean Water State Revolving Funds (CWSRF) under Title VI of the Clean Water Act may be used to provide nonfederal match for Section 319 nonpoint source grants. "Recycled" CWSRF resources are not treated by the state as federal funds and are therefore eligible to meet match requirements in accordance with EPA Section 319 grant guidelines and regulations. EPA encourages the leveraging of CWSRF resources by allowing an exemption from the 50% *watershed project* funding requirement for substantial fund leveraging. To be eligible, ADEM demonstrates to EPA Region 4 that state or local funding equivalent to ADEMs total federal Section 319 allocation (i.e., twice the total amount of the watershed project fund grant allocation) will be used for implementing watershed-based plans or acceptable alternative plans for watershed restoration or protection projects.

A successful, or potentially successful approach, may be assessed and demonstrated at a number of sites within a watershed and/or many locations statewide to indicate its utility and effectiveness in a variety of hydro-geological and sociological settings. This approach is also effective in providing education, information, and outreach to others who may wish to avail themselves of the same methodologies and practices used in the projects.

EPA and ADEM experiences have demonstrated that watershed problems are not adequately resolved without development of a comprehensive watershed-based management plan. To ensure widespread implementation of appropriate NPS measures and practices throughout an impaired priority watershed, ADEM continues to partner with other agencies, authorities and persons to fund the development of watershed plans and contribute resources to supplement Section 319 grant funding for implementation. The total cost share from Section 319, state, local or other federal funds will not exceed 100% of the total cost of a Section 319 funded activity or project. Pursuant to Section 319(h) (12), ADEMs administrative costs in the form of salaries, overhead or indirect costs for services provided and charged against activities, and programs carried out with the grant cannot exceed 10% of the grant award. The costs of implementing ADEM enforcement and regulatory activities, education, training, technical assistance, demonstration projects, and technology transfer are not subject to this limitation. GRTS-related activities (e.g., estimating and entering load reductions and programmatic information from a project) are considered by ADEM to be a program activity and may not be counted toward the 10% cap on administrative costs.

k) CZARA 6217 Set-Aside

Alabama has developed a state coastal zone management program under the Coastal Zone Management Act (CZMA) of 1972 and is developing and implementing the Coastal Nonpoint Pollution Control Program (CNPCP) in close coordination with the statewide AL NPS Management Program and Section 319 grant resources. Section 319 grant guidelines requires Alabama to set aside, at a minimum, the lesser amount of five percent of its federal allocation or $100,000 in Section 319 funds annually to complete the development of an EPA/NOAA approvable Alabama program. This requirement may be met on an average annual basis. For example, a Section 319 funded project that commits triple the ADEM annual minimum set-aside in one grant year will also meet set-aside requirements for the following two grant years (provided Section 319 funding allocations do not significantly increase in those years). This set-aside remains in place until EPA and NOAA have fully approved the Alabama CNPCP. EPA allots this set aside prior to determining the split between the watershed project funds and NPS program funds; that is, the set aside is not subject to the split between watershed implementation and program implementation. The ADEM details the use of the set-aside in its annual Section 319 grant workplans and describes how it will support advancement towards full program approval under CZARA.

l) National Water Quality Initiative

To support the USDA - National Water Quality Initiative (NWQI) in fiscal year 2014 (and subsequent years in which the NWQI program is continued), ADEM devotes Section 319 grant resources in its annual grant workplans to coordinate with NRCS in selecting priority waterbodies (generally Section 303(d) listed waters) and providing appropriately designed water quality monitoring activities where circumstances are aligned to assess the effects of conservation practices. Both Section 319 nonpoint source program and watershed project funding may be used to monitor water quality results in NWQI watersheds including, if necessary, in cases where a watershed-based plan has not been developed.

m) Water Quality Monitoring

Although water quality monitoring is an eligible Section 319 nonpoint source program fundable activity, those funds are generally used by ADEM to provide data for statewide NPS monitoring and assessment strategies and Section 319 workplan-defined NPS project needs and initiatives. Data collection may involve statewide, watershed-specific, ambient and trend monitoring, evaluate or improve monitoring and assessment protocols or document BMP implementation activities and project success. Due to continued national cut-backs in annual Section 319 appropriations (and insufficient monitoring resources available to ADEM), it is unlikely that any Section 319 grant funds will become available to fund ADEMs subgrantee water quality monitoring activities, including citizen volunteer monitoring.

➢ **Eligible Water Quality Monitoring Activities**

- Identify nonpoint sources and causes of pollution
- Supports the development of a watershed-based plan or acceptable alternative management plan

- Support the development of a NPS or mixed-source TMDL
- Evaluate the effectiveness of restoration activities relative to implementation of NPS best management practices funded by Section 319 or other resources
- Section 319 watershed project funding may be used for water quality results monitoring if it is a component of a watershed-based plan or acceptable alternative plan regardless of the entity conducting the monitoring.

➢ **Ineligible Water Quality Monitoring Activities**

- Monitoring that is not targeted toward identifying nonpoint sources of pollution or assessing the impact of NPS pollution control activities may not be supported with either NPS program funds or watershed project funds
- Monitoring to support the development of a watershed-based plan or TMDL is not eligible for watershed project funds.
- Baseline monitoring (e.g., monitoring to identify nonpoint sources or to characterize overall watershed health)

Chapter 10: Processes for Identifying and Assigning Water and Watershed Priorities

Section 10.1 Overview

Section 303(d)(1) of the Clean Water Act requires the state to establish a priority ranking of state waters and to identify them on Section 303(d) lists, taking into account the severity of pollution and the designated uses of such waters. ADEM establishes Total Maximum Daily Loads (TMDLs) for Section 303(d) listed waters in accordance with its priority ranking strategy. The ADEM uses a statewide planning approach to monitor and assess waters, establish TMDLs, or de-list restored or non-impaired waters. The TMDL uses the latest annually collected statewide water quality data because water quality data is the primary driver of the TMDL development process.

Waters currently identified on Section 303(d) lists generally will have a TMDL developed within 8 to13 years unless they become eligible for delisting. TMDLs for Category 5 "impaired" waters are developed no later than 13 years after the water is first placed in Category 5. The Section 305(b) Water Quality Report to Congress includes proposed schedules (both long term and annually) for the development of TMDLs. ADEM communicates with bordering states concerning the status of shared waters and provides data concerning shared waters to the adjacent state as requested. An EPA and ADEM priority is to target Section 319 grant watershed restoration funds to Section 303(d) listed impaired waters using water quality data to achieve pollutant load reductions as presented in a TMDL.

ADEM's priority ranking strategy places each waterbody/pollutant combination in one of three categories, namely "high", "medium" or "low". Typically, waters are given a "high" priority when resources are available to develop the TMDL within the next two years. For "medium" priority waters, not all resources and/or tools are available but the TMDL is expected to be developed within the next three to seven years. For "low" priority waters, resources are not readily available and the TMDL is scheduled to be developed in the next 8-12 years. The TMDL development schedule may not always consider only the ranking of the impaired waterbody; however, the following factors are generally used to assign priority for developing a TMDL; and generally, watershed plan development and implementation and/or targeting Section 319 NPS pollution mitigation resources:

- TMDL complexity
- Pollutants of concern
- Need for additional data and information
- Sources of the pollutants
- Severity of the impairment
- Pending rules and regulations
- Spatial extent of impairment
- General watershed management activities (e.g. Section 319 grant activities and watershed management planning)
- Existence of endangered and sensitive aquatic species
- Degree of public interest and support for particular waterbodies

Alabama's water quality standards consist of three components: designated uses, numeric and narrative criteria, and an antidegradation policy. Designated uses describe the best uses reasonably expected of waters and include such activities as recreation in and on the water, public water supply, agricultural and industrial water supply, and habitat

for fish and wildlife. While not all waters may support all of these uses, the goal of the Clean Water Act is to provide protection of water quality consistent with "fishable/swimmable" uses, where attainable. In Alabama, waters can be assigned one or more of seven designated uses pursuant to ADEM Administrative Code 335-6-11, including:

1) Outstanding Alabama Water (OAW)
2) Public Water Supply (PWS)
3) Shellfish Harvesting (SH)
4) Swimming and Other Whole Body Water-Contact Sports (S)
5) Fish and Wildlife (F&W)
6) Limited Warm water Fishery (LWF)
7) Agricultural and Industrial Water Supply (A&I)

Designated uses 1 through 5 provide for aquatic life and human health protection and are considered by EPA to be consistent with the CWA "fishable/swimmable" goal. The State also has two special designations: Outstanding National Resource Water (ONRW) and Treasured Alabama Lake (TAL). These high quality waters are protected or require a thorough evaluation of discharges from new or expanded point sources of pollutants and may be assigned to any one of the first five designated uses in the list above. While the EPA priority is to target Section 319 grant funding to impaired waters (.e.g. Section 303(d) list), ADEM may request to EPA the use of Section 319 grant funds to protect OAW, ONRW, or TAL classified waters in some instances in accordance with Section 319 nonpoint source grant guidelines.

Numeric and narrative criteria provide the means to measure the degree to which the quality of waters is consistent with their designated use or uses. Narrative criteria generally describe minimum conditions necessary for all uses and may include certain restrictions for specific uses. Numeric criteria include pollutant concentrations or physical characteristics necessary to protect a specific designated use. Alabama's narrative and numeric criteria are defined in ADEM Administrative Code 335-6-10.

The state's antidegradation policy classifies waters of the state according to the following ranking:

- Tier 3: High quality waters that constitute an outstanding national resource - ADEM Administrative Code 335-6-10-.10 prohibit new or expanded point source discharges
- Tier 2: Waters whose quality exceeds the levels necessary to support propagation of fish, shellfish, and wildlife recreation in and on the water - ADEM Administrative Code 335-6-10-.04 provides for new or expanded discharge of pollutants only after intergovernmental coordination, public participation, and a demonstration that the new or expanded discharge is necessary for important economic or social development
- Tier 1: Existing instream water uses and the level of water quality necessary to protect the existing uses

Alabama's narrative, numeric criteria and antidegradation policy water quality standards are described in ADEM Administrative Code 335-6-10 and 335-6-11 regulations (i.e. ADEM Division 6 - Volume 1).

The Continuing Planning Process (CPP) for the State of Alabama was originally developed in accordance with the requirements of the Federal Water Pollution Control Act (1972, as amended). The Alabama CPP is an umbrella document that provides the framework to coordinate and unify the activities and procedures necessary for maintaining waters of an acceptable quality throughout Alabama in a manner consistent with the Alabama Water Pollution Control Act and the Clean Water Act. The ADEM implements the integrated CPP water quality and watershed approach as follows:

- Stream, lake, and estuarine monitoring
- Water quality assessment and reporting under CWA Sections 305(b) and 303(d)
- Water quality modeling and total maximum daily load (TMDL) development
- Water quality standards development, review, and revision
- Nonpoint source pollution management
- Watershed management planning and development
- Funding projects via the state revolving loan fund (Clean Water SRF)
- Permitting and compliance for municipal, industrial, mining, and AFO/CAFO facilities
- Stormwater permitting and compliance
- Source water protection programs

- Operator training and assistance
- Education and outreach activities

The State has been operating under a rotating schedule to monitor and assess the state's 5 major river basin groupings in Alabama since 1997. Beginning in 2015, ADEM will begin using an iterative statewide strategy. Data and information is primarily collected for the CWA Section 305(b) Water Quality Report to Congress (Integrated Monitoring and Assessment Report) and to ascertain NPS threats and problems and Section 319 watershed project implementation success. The Section 305(b) Integrated Report. includes elements that describe the rotational watershed schedule, a description of the sampling approach (i.e. rotating basin and fixed ambient), and a list of the water quality parameters collected (i.e. physical, chemical, and biological).The report also includes a schedule (both long term and annually) for collecting data and information and developing TMDLs. Section 319 watershed and water quality monitoring and assessment prioritization and implementation strategies are also linked with other EPA and ADEM programs such as ground water, drinking water /wellhead protection, and coastal programs.

The Integrated Report combines the *Water Quality Inventory Report* (Section 305(b) with the *Impaired Waterbodies* [Section 303(d)] listing. Category 5 waters listed in the Integrated Report are considered the "Impaired Waterbodies" list. The remaining categories (Categories 1-4) are considered the Water Quality Inventory. The Integrated List follows the same public comment process as Section 303(d) listings. Categories 1-4 and the monitoring schedule are provided for informational purposes only since these schedules are subject to change. ADEM reviews all existing and readily available data and uses only data with acceptable quality assurance to develop the Integrated Report. Only electronic data or data available in published reports are considered "readily available." The priority for Section 319 grant funds is to target "Category 5" NPS impaired waters with an approved TMDL.

Section 10.2 Factors Used by ADEM to Assign Section 319 Grant Funding Priorities to Impaired Waters

Nonpoint source project priorities are based on available water quality data and information (e.g., reports and lists under CWA Sections 305(b), 303(d) , 314(a), 319(a), and 320. ADEM revises these programmatic reports and lists periodically as more up-to-date assessment information becomes available. In addition, Alabama's Surface Water Quality Monitoring Strategy and Continuing Planning Process is used to characterize the primary categories and subcategories causing the water quality impairments, threats, and risks across the state, identify trends and emerging problems, determine the efficacy of pollution control programs, direct pollution control efforts, and respond to emergencies such as floods and hazardous public health and environmental situations. ADEM updates the identification of waters impaired by NPS pollution in its biennial comprehensive CWA Section 305(b) Water Quality Report to Congress (Integrated Report). As presented in Table 10.2, these programmatic water quality data resources provide the foundation upon which to assign NPS pollution mitigation priorities.

Table 10.2 Factors Used By ADEM to Assign Restoration Priority to Impaired Waters and Watersheds

- Human health considerations including groundwaters used for drinking water sources
- Ecosystem integrity, including ecological risk and stressors
- Beneficial uses of water
- Value of the watershed or groundwaters perceived by the public
- Vulnerability of surface or ground water to additional environmental degradation
- Likelihood of achieving demonstrable environmental success results
- Degree of public and private sector understanding of the causes of impairment and solutions capable of restoring the water
- Implementability (site-specific technical feasibility and obstacles)
- Adequacy of existing water quality monitoring data and future monitoring commitments
- Degree to which TMDL allocations made to point sources are relevant or dependent on NPS load reductions being achieved
- Extent of partnerships with federal agencies, states, local public and private agencies/organizations and other stakeholders needed to coordinate mitigation resources and implement BMP measures and practices
- Availability and access of funding sources other than Section 319(h) grant funds
- Readiness to proceed by project partners

Restoration of impaired waters with approved TMDLs is an AL NPS Management Program and Section 319 grant guideline priority. These programs continue to place a high level of importance on restoring impaired waters identified on Section 303(d) lists; especially in partnerships with governmental agencies, private sector interests, and citizen groups at the state and subwatershed level. The Section 319 grant guidelines also places a strong emphasis on implementing a watershed-based approach to restore NPS impaired waters.

The EPA Recovery Potential Screening Tool is useful for comparing restorability of impaired waters across various watersheds. The Nitrogen and Phosphorus Pollution Data Access Tool (NPDAT) is a GIS-based tool designed to assist in identifying priority watersheds to address nutrient pollution. Both tools are recommended by the AL NPS Management Program.

Section 10.3 Scenarios Used by ADEM to Assign Priority to Unimpaired and High Quality Waters

Nonpoint source mitigation priorities uses available water quality data and information relative to reports and lists under CWA Sections 305(b), 303(d) , 314(a), 319(a), and 320. The ADEM updates these reports and lists periodically as up-to-date science-based data becomes available. Alabama's Surface Water Quality Monitoring Strategy and Continuing Planning Process are also used to characterize unimpaired and high quality waters. The ADEM provides listing updates in the biennial Section 305(b) Water Quality Report to Congress.

The assessment of high quality waters in Alabama begins with the collection, compilation, and evaluation of water quality data and information for the purpose of determining if a waterbody is supporting all of its designated uses. The ADEM ensures that the data and information is of adequate quality and provides an accurate indication of the water quality conditions in the waterbody since decisions arising from the assessment process may have long-term consequences. The use support assessment process considers all existing and readily available data and information with a goal of placing waterbodies in one of five separate categories. This process is specific to the highest designated use assigned to the waterbody.

Unimpaired waters (i.e., attains all applicable state water quality standards) are identified as Category 1 waters in the Section 305(b) Integrated Report. Category 1 waters include Outstanding National Resource Waters (Table 10.3.A), Treasured Alabama Lakes (Table 10.3.B) and Outstanding Alabama Waters (Table 10.3.C), as presented below:

Table 10.3.A Waterbody Segments Designated Outstanding National Resource Waters

River Basin	Segment	Downstream	Upstream	Classification
Black Warrior	Sipsey Fork and tributaries	Sandy Creek	Its source	S/F&W
Coosa	Little River and tributaries	Coosa River (Weiss Lake)	Junction of East Fork of Little River and West Fork of Little River	PWS/S/F&W
Coosa	East Fork of Little River and tributaries	Little River	Alabama-Georgia state line	PWS/S/F&W
Coosa	West Fork of Little River and tributaries	Little River	Alabama-Georgia state line	PWS/S/F&W
Mobile	Weeks Bay	Bon Secour Bay	Fish River	S/F&W

Table 10.3.B Waterbody Segments Designated as Treasured Alabama Lakes

River Basin	Segment	Downstream	Upstream	Classification
Tallapoosa	Tallapoosa River (Lake Martin)	Martin Dam	Highway 280	S/F&W
Tallapoosa	Tallapoosa River (Lake Martin)	Highway 280	Hillabee Creek	PWS/S/F&W
Tallapoosa	Little Kowaliga Creek (Lake Martin)	Big Kowaliga Creek (Lake Martin)	Reservoir Limits	PWS/S/F&W
Tallapoosa	Manoy Creek (Lake Martin)	Tallapoosa River (Lake Martin)	Reservoir Limits	PWS/S/F&W

Table 10.3.C Waterbody Segments Classified as Outstanding Alabama Water

Stream	From	To	Classification
Cahaba River	Alabama River	Junction of lower Little Cahaba River	OAW/S
Cahaba River	Junction of lower Little Cahaba River	Shelby County Road 52	OAW/F&W
Cahaba River	Dam near U.S. Highway 280	Grant's Mill Road	OAW/PWS
Cahaba River	U.S. Highway 11	Its source	OAW/F&W
Little Cahaba River (Bibb County)	Cahaba River	Its source (junction of Mahan and Shoal Creeks)	OAW/F&W
Hatchet Creek	Coosa River (Lake Mitchell)	Norfolk Southern Railway	OAW/S/F&W
Hatchet Creek	Norfolk Southern Railway	Junction of East Fork Hatchet Creek and West Fork Hatchet Creek	OAW/PWS/S/F&W

East Fork Hatchet Creek	Hatchet Creek	Its source	OAW/F&W
West Fork Hatchet Creek	Hatchet Creek	Its source	OAW/F&W
Tensaw River	Junction of Tensaw and Apalachee Rivers	Junction of Briar Lake	OAW/S/F&W
Tensaw River	Junction of Briar Lake	Junction of Tensaw Lake	OAW/F&W
Briar Lake	Junction of Tensaw River	Junction of Tensaw Lake	OAW/F&W
Tensaw Lake	Junction of Tensaw River	Bryant Landing	OAW/F&W
Wolf Bay and all connecting coves and bayous	Intracoastal Waterway	Moccasin Bayou	OAW/SH/S/F&W
Magnolia River	Weeks Bay	Its source	OAW/S/F&W
Tallapoosa River	Cane Creek	AL-GA state line	OAW/F&W

In an effort to increase resources to focus on protecting unimpaired and high quality waters, ADEM may from time-to-time, consult with EPA to allow a limited amount of Section 319 watershed project funds to be focused on protecting high quality waters of the state identified by a biennial Section 305(b) Integrated Report. In order to ensure that unimpaired waters remain unimpaired, the AL NPS Management Program continues to be evaluated and modified as applicable, to integrate adaptive management strategies that can maintain state water quality standards and beneficial designated uses. A mix of relevant NPS regulatory, nonregulatory, financial and technical assistance education, training, technology transfer, practice or system of practices or measures may be used including but not limited to:

- Watershed or water quality-based approaches aimed at maintaining water quality standards directly
- Iterative, technology-based approaches based on the implementation of best management practices, measures, or other activities applied on either a major NPS categorical or project site specific basis
- An appropriate mix of these approaches

The resources of various NPS programs, institutional relationships, land management programs, development projects and financial assistance programs are coordinated and integrated with the Section 319 grant resources to coordinate the statewide NPS management program with Coastal Programs. The Alabama Coastal Nonpoint Pollution Control Program continues to be integrated into and consistent with the statewide NPS management program. In-place ADEM authorities, programs, projects and resources include:

- Stream, lake, coastal and other water quality monitoring and assessments
- CWA Sections 305(b), 303(d), 314(a), 319(a), and 320 water quality assessments and reporting
- Total Maximum Daily Load (TMDL) development
- Environmental Regulations and Laws (water quality standards development, review, and revision)
- Nonpoint Source Management Program / Section 319 grant projects
- Watershed-based plan development and implementation
- State Revolving Fund (SRF)
- Section 401 State Water Quality Certifications
- Anti-Degradation policy language in ADEM Division 1 regulations
- Groundwater, Drinking Water and Wellhead Protection Programs
- Construction Stormwater
- CAFO animal waste collection, storage and disposal
- Pesticide Program
- Landfills, Hazardous Waste, Solid Waste, and Brownfields
- Memorandum of Understanding (MOU) and Memorandum of Agreement (MOA) (**see** Appendix F.8)

10.3.1 EPAs Healthy Watersheds Initiative (HWI)

The AL NPS Management Program seeks to implement applicable NPS components of EPAs Healthy Watersheds Initiative (HWI) to protect healthy Alabama watersheds, prevent them from becoming impaired, and accelerate water quality protection successes. This HWI is part of EPAs comprehensive NPS pollution management approach to integrate the protection of high quality waters with efforts to restore impaired waters. The EPA developed the HWI national framework and action plan to help meet the objectives of the EPA 2011-2015 Strategic Plan. The Strategic Plan seeks to protect, restore and maintain the chemical, physical and biological integrity of the nation's waters and aquatic ecosystems. The HWI also complements goals and objectives of the AL NPS Management

Program aimed at maintaining state water quality standards and supports efforts to protect waters identified as Outstanding National Resource Waters, Treasured Alabama Lakes and Outstanding Alabama Waters.

The NWI (Table 10.3.1) connects existing impaired water quality restoration efforts in Alabama while focusing on the protection of high quality watersheds recognizing the dynamic and interconnected nature of aquatic ecosystems.

Table 10.3.1 EPA's Healthy Watersheds Initiative and AL NPS Management Program Coordination

Ecological Benefits to Watershed Stakeholders:

- Provides clean water required for healthy aquatic ecosystems, habitat for fish and wildlife, safe drinking water, recreational opportunities and mental and physical health benefits
- Maintains the integrity of natural biological and physical systems through ecosystem services
- Prevents degradation of riparian ecosystems that can cause negative environmental and economic impacts far from the altered site
- Maintains the natural structure and functions on an ecosystems scale rather than simply improving water quality in a narrowly defined sense. While recognizing the importance of protecting stream segments independently (e.g., water chemistry), it is also important to protect watersheds as whole, interconnected systems that include all integral hydrologic, geomorphic and other processes.
- Is supported by the latest science that views watersheds as dynamic systems that include surface water (instream flow in rivers and lake levels) and sub-surface groundwater quantity variability, water quality, biological resources and their habitat, and other key processes (e.g., geomorphic) that support healthy aquatic resources.
- Maintains riparian connectivity and natural processes in the landscape that provide a supporting network for ecological integrity, ensuring sustainable clean water over time
- May help reduce water quality vulnerabilities to potential climate change impacts and associated adaptation costs

Economic Benefits to Watershed Stakeholders:

- Lowers costs for supplying and treating drinking water
- Provides air filtration, carbon storage, nutrient cycling, soil formation, and food and timber
- Sustains revenue-generating recreational (fishing, boating, swimming, and eco-tourism) opportunities
- Minimizes vulnerability and damage from hazards and natural disasters such as flooding and wildfire
- Provides critical ecosystem services at a fraction of the cost for engineered services or are difficult to replace
- Increases property values and supports jobs
- Ensures a foundation for a vibrant economy for generations to come
- The economic contributions of healthy watersheds and waters are often undervalued or under-appreciated by many entities charged with making pre-development land use decisions. It is much more fiscally responsible to prevent negative impacts and protect natural resources than to try to restore their conditions post development.

Coordination and Implementation Strategies:

- Establish partnerships to identify, leverage, and implement programs and plans to protect healthy watersheds by coordinating federal and state water quality and aquatic resource protection agencies and private sector resources to target the highest priority watersheds.
- Identify and prioritize watersheds and intact components of altered watersheds state-wide using professional, scientifically sound, strategic, integrated assessments (list, track, maintain and increase in number over time)
- Evaluate ecological data and information to help set watershed protection options and priorities
- Develop plans to protect healthy watersheds using the best regulatory and non-regulatory tools as based on vulnerability, public and private sector partnerships and interests, and other opportunities as resources allow
- Implement state-wide and local strategic protection programs and plans based on priorities from state and local assessments
- Measure progress and tie to securing and raising program support, meeting public health and natural resource protection goals, and providing socio-economic well-being benefits of clean and healthy waters

Section 10.4 Nutrient Criteria

A primary objective of ADEM efforts to develop state nutrient criteria is to determine levels that are protective of the designated beneficial uses for each Alabama reservoir. The rationale is the establishment of water quality criteria consistent with the "fishable / swimmable" goal of the Clean Water Act. Alabama's surface waters represent some of the most biologically diverse aquatic ecosystems in the United States. Because of the large diversity in geographic and climatic conditions from one region to another (14 major river basins and 25 different sub-ecoregions) as well as significant variability in dam operations between reservoirs; ADEM has used best professional judgment to develop nutrient criteria on a lake-specific basis rather than on a more aggregate basis such as an ecoregional approach. The lake-specific approach captures the large variability inherent in Alabama's man-made reservoirs, where chlorophyll *a* concentrations are typically affected by such factors as reservoir depth, reservoir retention time, and scheduling of power generation. Nutrient levels (expressed as seasonal means of chlorophyll *a* concentrations) are targeted that correlate with reservoir conditions that support the designated beneficial uses. Historical data depicts the diversity of reservoir conditions in Alabama, from lakes in the Tallapoosa River Basin that are naturally oligotrophic-mesotrophic, such as lakes Martin, Yates and Thurlow; to lakes that tend to be more eutrophic, such as the mainstem reservoirs on the Tennessee and Coosa Rivers. Section 319 grant funds

continues to target nutrient loadings from nonpoint sources in impaired watersheds such as the Coosa River (e.g. Spring Creek, Broken Arrow, and Buxahatchee), Tennessee River Valley (Bear Creek Initiative), and Warrior River (North River Restoration) major river basin systems.

The ADEM recognizes that analyses of reference conditions relative to establishing nutrient criteria in reservoirs in Alabama can be limited due to the fact that there may be a general level of uncertainty regarding what constitutes "natural" conditions for a man-made body of water. In developing nutrient criteria, ADEM evaluates selected chlorophyll *a* criteria values specifically associated with a condition of full use support in each reservoir, taking into account factors that are considered unique to various trophic conditions. To maintain nutrient levels within the ranges associated with full use-support conditions, best professional judgment is used to derive criteria values that "cap" each reservoir system with a protective chlorophyll *a* concentration. In establishing chlorophyll *a* targets, variability occurring within the growing season is taken into account. The ADEM believes that when establishing nutrient criteria, it is vital to set water quality standards that adequately consider all the beneficial uses of the reservoir (fishing and swimming alike). The typical hydraulic regime and flow characteristics of each reservoir are other key factors that are considered during criteria development. Caution is also warranted if regulatory actions may result in a potentially undesirable shift in fish species.

Nitrogen and phosphorus are beneficial to healthy aquatic ecosystems; however over-enrichment of these nutrients (from point and nonpoint sources) in a waterbody can degrade water by causing an excessive growth of algae and other aquatic vegetation; resulting in risks to fish, shellfish, other aquatic organisms, and human health. An over-abundance of algae and aquatic plant growth may cause the waterbody to not meet its designated water use classification and may contribute to significant environmental and economic impacts. The relationship between water quality, biomass accumulation, and hydraulic residence time (or retention time) is taken into account when establishing the chlorophyll *a* criteria. Increased algal biomass can potentially deplete dissolved oxygen levels within the reservoir through bacterial decomposition and photosynthetic respiration. Nutrient concentrations generally tend to decrease as they move downstream; thus, in developing nutrient criteria, the chlorophyll *a* targets are set so that along certain stretches of river, each successive reservoir has a lower criteria value as you move downstream. This holistic approach considers naturally occurring processes that influence nutrient concentrations so that downstream water quality is protected.

Section 319 grant guidelines place a strong emphasis on achieving nutrient pollutant load reductions [i.e. nitrogen (N) and phosphorus (P)]. Section 319 grant funds continue to address nutrient criteria for Alabama reservoirs as a component of watershed-based management plans and as resources allow. Nutrient load reductions from Section 319 funded projects are reported by ADEM annually in the EPA Grants Reporting and Tracking System (GRTS) database. The AL NPS Management Program promotes strong, sustained and integrated cooperative efforts to address nutrient issues in Alabama using strategic actions presented in Table 10.4, below:

Table 10.4 Strategies to Address Nutrient Nonpoint Sources

- Support the development and implementation of statewide nitrogen and phosphorus pollution frameworks called for in the March 16, 2011 memo from Nancy Stoner, Acting Assistant Administrator for Water
- Continue to refine ADEM nutrient regulatory and nonregulatory monitoring, assessment and use-support criteria approaches that considers all beneficial uses of the state's waters
- Continue to fully integrate CWA Section 319 (i.e. nitrogen and phosphorus pollutant load reductions) and CWA Section 314 (Clean Lakes) and CWA Section 303(d) and TMDL projects in ADEMs annual statewide monitoring strategies to measure both watershed-scale and cumulative effects of multiple nutrient-based programs, projects and trends over time. Coordinate with and leverage Clean Water SRF and stormwater runoff resources as practicable.
- Ensure monitoring and reporting of nutrient mitigation (pre- and post-benchmarks) reflects the time it takes to implement pollution control measures, as well as the time needed for water quality indicators to respond, including lag times (e.g., water quality response as it is influenced by water flows or the extra time it takes for sediment bound pollutants to break down, degrade or otherwise be isolated from the water column).
- Target applicable water quality, BMP implementation, Section 319 priority pollutant load reductions, and other measures and indicators of progress of the AL NPS Management Program
- Continue to promote strong sustained efforts to coordinate and leverage the processes and resources of USDA-NRCS conservation programs and the NWQI, State Soil and Water Conservation Commission and Districts, AFO/CAFO, Coastal Programs (e.g. CZARA 6217, GOMA, GOMI, and NEP). Also utilize the resources of the USFWS, USFS, AFC, USACOE, TVA and other agencies to increase efficiency and environmental results.
- Enhancing opportunities to promote and implement approaches across the state that target the use of certain products and practices that contribute to NPS pollution runoff (e.g. restricting the use of phosphorus in lawn fertilizers; projects such as precision farming)
- Continuing to develop and enforce nutrient runoff controls for household septic systems, setbacks from waterways, and other NPS municipal, industrial, mining, and construction stormwater runoff control mechanisms.

- Continue to seek ways to protect groundwaters, drinking water / wellhead protection, special and high quality waters from nonpoint sources of pollution

Section 10.5 EPAs National NPS Monitoring Program

The EPA National NPS Monitoring Program can provide sound science-based technical information to help entities plan, develop and implement NPS programs and to develop and implement watershed-based management plans. The EPA coordinates information delivery of this program relative to Section 319 of the Clean Water Act. The program evaluates measures designed to control nonpoint sources of pollution in order to improve the understanding of the relationship between NPS threats and problems and mitigation techniques and successes. Water quality monitoring coordinated with implementation of land treatment practices is an integral component of all the national monitoring projects. The Geological Survey of Alabama used a paired watershed approach to conduct physical, chemical, and biological water quality monitoring in the Lightwood Knot Creek Watershed, Jackson Lake, in Geneva County, Alabama. This project was one of only 23 projects nationwide to be selected by EPA (and one of two in EPA Region 4) to be a part of this national program effort. The AL NPS Management Program encourages watershed plan developers to use information generated from this national endeavor to select local projects; develop implementation strategies; and to track and analyze water quality data to verify project successes.

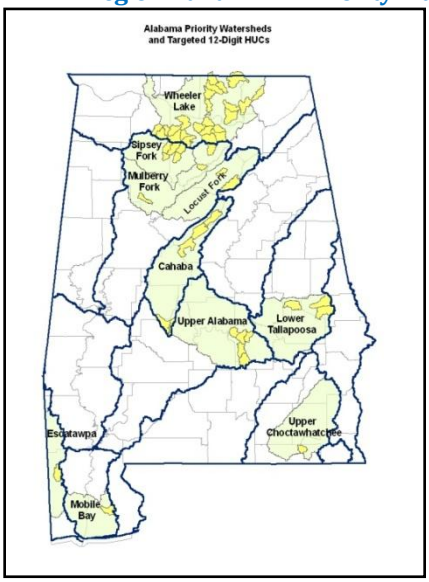
Section 10.6 EPA Region 4 and ADEM Priority Watersheds and Targeting

Priority watersheds are those that EPA Region 4 and ADEM have agreed to focus mutual resources to monitor and to protect and restore. Table 10.6.1 provides priority hydrologic units code (HUC) watershed names and links as listed on the EPA "Surf Your Watershed" website. Figure 10.6.2 illustrates EPA Region 4 / ADEM prioritized watersheds (January 2013). The AL NPS Management Program and the Section 319 grant program targets these watersheds using ADEMs annual statewide monitoring and assessment plans and strategies. Section 319 grant funds are used to target impaired HUC-12 subwatersheds within these 8-digit watersheds as practicable and as resources allow. Project implementation status and restoration / water quality results as applicable are presented in Section 319 Annual Reports and EPAs GRTS database.

Table 10.6.1 EPA Region 4 /ADEM Priority Watersheds List

Hydrologic Unit Code	Watershed Name and Link to "Surf Your Watershed"
03150202	Cahaba
03160111	Locust
03160110	Sipsey Fork
03150201	Upper Alabama
03140201	Upper Choctawhatchee
03150110	Lower Tallapoosa
03160109	Mulberry
03160205	Mobile Bay
03170008	Escatawpa
06030002	Wheeler Lake

Figure 10.6.2 EPA Region 4 and ADEM Priority Watersheds Map



Section 10.7 USDA-NRCS National Water Quality Initiative (NWQI) Priority Watersheds

In collaboration with the USDA office of the NRCS in Alabama, the Alabama Clean Water Partnership (ACWP) solicits public input to prioritize Alabama watersheds and impaired streams in need of restoration or protection. This cooperative public and private sector imitative supports implementation of the USDA - National Water Quality Initiative (NWQI) in Alabama. Impaired waters lists are identified at the 12-digit HUC level in each of the ten ACWP delineated major river basins. A compendium of prioritized waters, by major basin, is compiled by the ACWP and this list is then used by NRCS to focus NWQI resources.

The three major Ranking Categories used to identify priority waters for NWQI funding include:

1) **Agriculture and Forestry Conservation** (focuses on sediment and nutrient pollutant load reductions)
2) **Urban Conservation** (focuses on erosion and sediment control; low impact development and other measures)
3) **Aquatic Resources** (focuses on aquatic restoration)

Public responses to the 3 Ranking Categories above were used to list at least 3 prioritized 12-digit HUC watersheds for each Ranking Category in each of the 10 major river basins. A list of the "Top-15" watersheds in the state for each of the three categories is then produced. A fact sheet for the top five statewide watersheds in each Ranking Category describes the watershed, water quality issues, and ongoing stakeholder efforts in each priority watershed. The latest NWQI priority lists for Alabama are available to the public on the ACWP website.

Section 10.8 EPA Office of Water Programs – WATERS

The Watershed Assessment, Tracking and Environmental Results System (WATERS) is national surface water network developed to improve communication and reporting efficiency relative to surface water quality. The network is based on the NHDPlus dataset which incorporates the best features of the National Hydrography Dataset (NHD), the National Elevation Dataset (NED), and the Watershed Boundary Dataset (WBD). Stakeholders may use WATERS to access information about the quality of surface waters, including but not limited to:

- Designated use(s) of a waterbody
- Water quality monitoring results
- Assessments of water quality
- Causes and sources of impaired waters
- Public beach closures
- Location of dischargers

The following resources (Table 10.8) are recommended by the AL NPS Management Program for entities involved in watershed-based management plan development and implementation, development of watershed health and water quality protection and restoration measures and indicators of success, or with an interest in environmental and human health protection relative o nonpoint sources.

Section 10.8 EPA Programs Relevant to NPS Pollution Management and Water Quality Restoration

Office of Water Programs	Program Database	Program Description
Water Quality Standards	WQSDB	The **Water Quality Standards Database (WQSDB)** contains information on designated waterbody uses and the scientific criteria to support that use. Example uses include drinking water supply, recreation, and fish protection. As part of the state's water quality standards, designated uses provide a regulatory goal for the waterbody and define the level of protection assigned to it.
Integrated Reporting S. 305(b) Report and S. 303(d) Lists	ATTAINS	The Assessment**, TMDL Tracking And Implementation System (ATTAINS)** database contains information reported by the states to EPA about the conditions in their surface waters. The database presents information relative to attainment of state water quality standards (sometimes referred to as the Clean Water Act Section 305(b) information) as well as a list of impaired waters that need a Total Maximum Daily Load (sometimes referred to as the Clean Water Act Section 303(d) List). ATTAINS is a combination of what was formerly referred to as the National Assessment Database (NAD) and the National TMDL Tracking System (NTTS).
Water Quality Inventory S. 305(b) Report	NAD	The **National Assessment Database (NAD)** presents information relative to the attainment of water quality standards. Assessed waters are classified as Fully Supporting, Threatened, or Not Supporting their designated uses and reported in the National Water Quality Inventory Report to Congress under Section **305(b)** of the Clean Water Act.
Impaired Waters with TMDLs S. 303(d) Lists	TMDL Tracking System	The **Total Maximum Daily Load (TMDL) Tracking System** contains information on waters that are Not Supporting their designated uses. These waters are listed by the state as **impaired** under Section 303(d) of the Clean Water Act. The status of TMDLs is also tracked. TMDLs are pollution control measures that reduce the discharge of pollutants into impaired waters.
Water Quality Monitoring	STORET	The **STORET** (STOrage and RETrieval) database system is a repository of water quality chemical, biological, and physical data available to state environmental agencies, EPA and other federal agencies, universities, private citizens, and others . The Legacy Data Center (LDC) contains historical water quality data dating back to the early part of the 20th century and collected up to the end of 1998.
NPDES Facility Permits	ICIS - NPDES	Discharge of pollutants into waters of the United States is regulated under the **National Pollutant Discharge Elimination System (NPDES)**, a mandated provision of the Clean Water Act. To assist with the regulation process, state and federal regulators use an information management system called the **Integrated Compliance Information System (ICIS-NPDES).** ICIS-NPDES stores data about NPDES facilities, permits, compliance status, and enforcement activities. ICIS-NPDES replaces the legacy Permit Compliance System (PCS).
Safe Drinking Water	SDWIS	The Safe Drinking Water Act (SDWA) requires states to report to EPA information about public water systems, including violations of EPA drinking water regulations. Regulations and enabling statutes establish maximum contaminant levels, treatment techniques, and monitoring and reporting requirements to ensure that drinking water provided to customers is safe for human consumption. This information is stored in **SDWIS - Safe Drinking Water Information System**.
Fish Consumption Advisories	NLFWA	The **National Listing of Fish and Wildlife Advisories (NLFWA)** database includes information describing state, tribal, and federally-issued fish consumption advisories throughout the United States and Canada.
Nonpoint Source Pollution	GRTS	The **Grants Reporting and Tracking System (GRTS)** is a primary progress and success reporting vehicle for the Section 319 program. GRTS enables EPA and the public and private sectors to evaluate the progress made in implementing the national **Nonpoint Source (NPS) Pollution** program. GRTS is used to track all NPS project activities funded by ADEM with CWA Section 319(h) grant funds.
Nutrient Criteria	Nutrient Criteria Database	The **Nutrient Criteria Database** stores and analyzes nutrient water quality dat. Information is used to help in the development of scientifically-defensible numeric nutrient criteria. The ultimate use of the data is to derive ecoregional waterbody-specific numeric nutrient criteria.
BEACH program	BEACH Watch	The Beaches Environmental Assessment, Closure & Health **BEACH Watch** database provides information on whether a specific beach is being monitored for water quality, who is responsible for the monitoring, the pollutants that are being monitored, and if advisories or closures have been issued.

No-Discharge Zones for Vessel Sewage	NDZ	Vessel sewage discharge is regulated under Clean Water Act Section 312, which mandates the use of marine sanitation devices (on-board equipment for treating and discharging or storing sewage) on all commercial and recreational vessels that are equipped with installed toilets. Under Section 312, states may also request a **No-Discharge Zone (NDZ)** designation to prohibit the discharge of sewage from all vessels into defined waters.
Clean Watersheds Needs Survey	CWNS	The **Clean Watersheds Needs Survey (CWNS)** provides information on publicly-owned wastewater collection and treatment facilities, facilities for control of sanitary sewer overflows (SSOs), combined sewer overflows (CSOs), stormwater control activities, nonpoint sources, and programs designed to protect the nation's estuaries. Information obtained from the survey is maintained in the CWNS database.

Table G.8.A is derived from: Watershed Assessment, Tracking & Environmental Results System (EPA Office of Water Programs)

Section 10.9 Collaboration of the AL Nonpoint Source and Section 319 Programs with EPAs Strategic Plan

The AL NPS Management Program continues to implement applicable NPS components of EPAs 2011-2015 Strategic Plan (as updated in the future) in Alabama to enhance watershed health, prevent waters of the state from becoming impaired, and accelerate water quality restoration successes. The Strategic Plan is designed to protect, restore and maintain the chemical, physical and biological integrity of the nation's waters and aquatic ecosystems. It also complements ADEM efforts to report the status of waters that meet or do not meet state water quality standards. The AL NPS Management Program and Section 319 grant program continues to support Strategic Plan activities designed to achieve NPS pollutant load reductions, improve water quality, and as applicable, address requirements of the Government Performance and Reporting Act of 1993 (GPRA). Other ADEM efforts to meet EPA Strategic Plan priorities include reporting annually on water quality improvements relative to the EPA GRTS database (Table 10.9), NPS Program Management /Section 319 Annual Reports, mutually agreed upon commitments under EPA/ADEM Performance Partnership Agreements, and EPA "Section 319 Nonpoint Source Success Stories."

Collaborative efforts specifically target the following EPA Strategic Plan priorities:

- Goal 2: Clean and Safe Water
- Objective 2.2: Protect Water Quality
- Sub-objective 2.2.1: Improve Water Quality on a Watershed Basis

Table 10.9 EPA Water Measures: Improve Water Quality on a Watershed Basis (Sub-Objective 2.2.1)

	SP-10	SP-11	SP-12 Option 1	SP-12 Option 2a	SP-12 Option 2b	WQ-10
Description	Full Attainment	Partial Attainment	Watershed Water Quality Improved	Watershed Water Quality Improved	Watershed Water Quality Improved	Non-Point Source Water Quality Improved
Unit of Measure	Waterbody (Assessment Unit)	Waterbody (Assessment Unit)	HUC-12	HUC-12	HUC-12	Impaired Sub-Watershed
Baseline Impairment	2002 Impaired Waters	2002 Impaired Waters	2002 Impaired Waters	2002 Impaired Waters	2002 Impaired Waters	2000 (or later) Impaired Waters
Improvement Reason	Any	Any	Restoration Activities Only	Restoration Activities Only	Restoration Activities Only	Restoration Activities Only
Impairment Causes Addressed	All	One or More	One or More	One or More	One or More	One or More
Improvement Criteria	Meets WQS	Meets WQS	Meets WQS	Significant Improvement in Non-Attainment Gap	Significant Improvement in Non-Attainment Gap	Meets WQS or Meets Designated Use
Special Requirements	All impairments must be removed (all parts of sub-divided segment)	(all parts of sub-divided segment)	Watershed Approach Impairments removed for 40% of HUC12	Watershed Approach Watershed Wide Improvement (Statistical)	Watershed Approach Watershed Wide Improvement (Weight of Evidence)	Primary Non-Point Source Issue
Required Documentation	IR reporting	IR reporting	Document in Template with supporting information	Document in Template with supporting information	Document in Template with supporting information	Non-Point Success Story Write Up

Chapter 11: Eight Key Elements of an Effective State NPS Management Program

Section 11.1 Overview

The Clean Water Act does not require states to revise their NPS Management Programs; however, Section 319 grant guidelines (2013) requires all states to review, and as appropriate, update their programs every five years (at a minimum). Updates of the AL NPS Management Program allows EPA and other public and private sectors to assess programmatic and fiscal accountability and whether the state is making satisfactory progress in mitigating nonpoint sources of pollution and improving water quality. Regular updates of the AL NPS Management Program is intended to ensure that NPS administration and management resources are directed in an effective and efficient manner and that efforts to address water quality are conducted using a watershed-based management approach as practicable.

Programmatic elements are presented in **Appendix H (Key Components of an Effective Nonpoint Source Management Program)**. Elements to evaluate state NPS pollution management programs were developed on a national scale with input from a joint EPA/State workgroup during 2012 - 2013 (Section 319 grant guideline – Appendix A).

APPENDICES: Major Nonpoint Source Management Categories, Programs and Partners

Then following Appendices are presented to strengthen implementation of the Alabama Nonpoint Source Management Program. The overall strategy is to refine broader scope and scale NPS management goals and objectives of the state's Integrated Framework. Each Appendix is designed to help ensure that CWA Section 319 grant funds, technical support, and other resources are well integrated, leveraged, and directed in an effective and efficient manner. Strategies and Action Items support efforts to address nonpoint source water quality protection and restoration threats and problems on a watershed basis in order to achieve and maintain state water quality standards and maximize water quality use benefits.

Appendices are periodically revised to reflect new and emerging strategies or mitigate barriers towards achieving long-term programmatic NPS goals and objectives and shorter-term / annual project-level milestones. Revisions to this document are not expected to be comprehensive unless warranted by significant EPA directives, Section 319 grant guidelines, or major changes to ADEM nonpoint source management program authorities and resources. It is strongly recommended that federal, interstate, regional, state, and local agencies; public interest groups, industries, municipalities, academic institutions, landowners/users, producers, concerned citizens and others as appropriate, continue to provide the ADEM Nonpoint Source Unit with relevant suggestions and comments to enhance any component of any Appendix listed below. The timeline for making suggestions and comments to improve the quality of this document or any component of any Appendices is open-ended.