NOAA/EPA DECISIONS ON CONDITIONS OF APPROVAL FOR THE ALABAMA COASTAL NONPOINT PROGRAM

FOREWORD

The Coastal Nonpoint Pollution Control Program, set forth in section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), 16 U.S.C. § 1455b, addresses nonpoint source pollution problems in coastal waters. Section 6217 directs states and territories with approved coastal zone management programs to develop and implement management measures for nonpoint pollution control to restore and protect coastal waters (coastal nonpoint programs).

This document provides the bases for the decision by the National Oceanic and Atmospheric Administration (NOAA) and the United States Environmental Protection Agency (EPA) (collectively, federal agencies) that Alabama has met the conditions that the federal agencies had identified in the earlier approval of Alabama's coastal nonpoint program on June 30, 1998, pursuant to CZARA (1998 findings). In this document, the federal agencies describe how the State program modifications since that time satisfy each of the conditions identified in the 1998 findings.

DECISION

The federal agencies issued findings on June 30, 1998, approving Alabama's coastal nonpoint program submission subject to conditions. Those findings are available at *https://coast.noaa.gov/data/czm/pollutioncontrol/media/findal.txt*. Since that time, Alabama has undertaken a number of actions to address each of the identified conditions. Based on those actions and the materials provided by the State that document how its program meets each condition, NOAA and EPA find that Alabama has satisfied all conditions on its coastal nonpoint program.

INTRODUCTION

CZARA directed EPA to develop technical guidance to assist states and tribes in designing coastal nonpoint programs. On January 19, 1993, EPA issued that guidance in the document, titled *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*, 840-B92-002 (January 1993), which addresses five major source categories of nonpoint pollution: (1) urban runoff; (2) agriculture runoff; (3) forestry runoff; (4) marinas and recreational boating; and (5) hydromodification. The guidance also addresses nonpoint source pollution issues associated with the loss or damage to wetlands and riparian areas. The guidance is commonly referred to as the 6217(g) guidance because the statutory direction to EPA appears in CZARA section 6217(g).

This document is organized following the same structure that was used for the federal agencies' 1998 findings to support approval of Alabama's program, with conditions, grouping together the conditions related to each major nonpoint source category or subcategory and other programmatic elements. The structure for each condition follows a standard format. Each original finding and condition identified in 1998 is repeated and a rationale is provided detailing

how the State has met the condition. In addition, for reference purposes, a list of acronyms is included at the end of this document.

For further understanding of terms in this document, please refer to the following:[1]

- *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (EPA, January 1993)
- *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance* (NOAA/EPA, January 1993)
- *Flexibility for State Coastal Nonpoint Programs* (NOAA/EPA, March 1995)
- *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance for Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA)* (NOAA/EPA, October 1998) ("Final Administrative Changes")
- *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations* (NOAA/EPA, December 2002).

The federal agencies rely on, but do not repeat here, except as relevant to the decision, extensive information that the State included in various submittals to support its coastal nonpoint program. Further information and analysis are contained in the administrative record for this decision and are available upon request at the following locations:

U.S. EPA Headquarters, Office of Water
Nonpoint Source Management Branch
1200 Pennsylvania Ave., NW (4503-T)
Washington, DC 20460
Contact: Catherine Brady (202/566-2424)

NOAA, Office for Coastal Management
SSMC-4, N/OCM6
1305 East-West Highway
Silver Spring, MD 20910
Contact: Allison Castellan (202/596-5039)

U.S. EPA Region 4, Water Division
61 Forsyth St. SW
Atlanta, GA 30303
Contact: Duane Robertson (404/562-9398)

I. BOUNDARY

1998 FINDING: Alabama's proposed coastal nonpoint management area excludes existing land and water uses that reasonably can be expected to have a significant impact on the coastal waters of the State.

[1] All the guidance documents for the Coastal Nonpoint Program are available online at: *https://coast.noaa.gov/czm/pollutioncontrol/*.

1998 CONDITION: Within one year, the Alabama Department of Environmental Management, Alabama Department of Environmental Quality, U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration and other relevant State, local, and federal agencies will participate in a cooperative process to determine an appropriate coastal nonpoint management area boundary to protect the State's coastal waters from nonpoint source pollution.

DECISION: Alabama has satisfied this condition.

RATIONALE: CZARA section 6217(b)(7) requires each state program contain a proposed or recommended coastal zone boundary modification as necessary to implement NOAA and EPA recommendations. As directed by section 6217(a), the geographic scope of each coastal nonpoint program must be sufficient to ensure implementation of management measures to "restore and protect coastal waters." Section 6217(e) requires NOAA to conduct a review of each state's coastal zone boundary and directs NOAA to determine the geographic area encompassing the land and water uses that have a "significant" impact on a state's coastal waters. NOAA and EPA evaluate whether each state coastal zone boundary extends inland to the extent necessary to control nonpoint source pollution from land and water uses that have a significant impact on a state's coastal waters.

Since the 1998 finding, Alabama has established a coastal nonpoint program boundary that includes the State's coastal zone boundary, which extends from the continuous 10-foot contour seaward to the three-mile limit inland in Mobile and Baldwin counties and includes the entirety of Baldwin and Mobile counties. Alabama's coastal boundary is consistent with NOAA and EPA's coastal nonpoint program boundary recommendations from the 1998 findings that Alabama's boundary should encompass the land and water uses that have a significant impact on coastal waters in the State.[2]

II. AGRICULTURE

1998 FINDING: Alabama's program does not include management measures in conformity with the 6217(g) guidance. Alabama has identified back-up enforceable policies and mechanisms to implement the management measures but has not yet demonstrated the ability of the authorities to ensure widespread implementation of the management measures throughout the coastal nonpoint management area.

1998 CONDITION: Within two years, Alabama will revise its implementation manuals to provide for conformity with all of the 6217(g) guidance management measures for agricultural activities in the coastal nonpoint management area. Within one year, Alabama will develop a strategy (in accordance with section XIV, page 13 of the 1998 findings document) to implement the agricultural management measures throughout the coastal nonpoint management area.

DECISION: Alabama has satisfied this condition.

[2] NOAA and EPA. Alabama Coastal Nonpoint Program Findings and Conditions. 1998. Accessed 07/11/2024. *https://coast.noaa.gov/data/czm/pollutioncontrol/media/findal.txt*

RATIONALE: Alabama has developed a strategy which incorporates both regulatory and voluntary approaches, including its combined feeding operation rule, pesticide rule, and outreach and technical assistance efforts through partnerships with the United States Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS), local Soil and Water Conservation districts (SWCDs), and Alabama's Cooperative Extension System (ACES). This technical assistance promotes agriculture best management practices contained within NCRS Field Office Technical Guides (FOTGs) and other ACES outreach materials to ensure nonpoint source pollution from agriculture lands is minimized. The State has also provided a legal opinion and supporting documentation that demonstrates that it has adequate back-up authority and is committed to implementing the agriculture management measures throughout its coastal nonpoint management area, when needed.

Erosion and Sediment Control

The 6217(g) agriculture management measure for erosion and sediment control calls for states to:

1. Apply the erosion component of the Conservation Management System (CMS) as defined in the Field Office Technical Guide (FOTG) of the USDA Soil Conservation Service (now known as the NRCS[3]) to minimize the delivery of sediment from agricultural lands to surface waters, or
2. Design and install a combination of management and physical practices to settle the settleable solids and associated pollutants in runoff delivered from the contributing area for storms of up to and including a 10-year, 24-hour frequency.

The ACES, NRCS, and local SWCDs collectively promote the use of erosion and sediment control best management practices (BMPs) within the agricultural community and provide technical assistance to help implement practices consistent with the 6217(g) guidance. The active technical assistance effort encourages the use of NRCS FOTG BMPs [4,5,6,7,8] to reduce erosion and sediment runoff from agricultural practices and promotes a collection of state-specific resources to minimize the delivery of sediment from agricultural lands to surface

[3] Congress changed the Soil Conservation Service's name in 1995 to the Natural Resources Conservation Service to better reflect the broadened scope of the agency's concerns. United States Department of Agriculture, Natural Resources Conservation Service. A Brief History of NRCS. Not dated. Accessed 07/11/2024. *https://www.nrcs.usda.gov/about/history/brief-history-nrcs*

[4] Natural Resources Conservation Service. 2018. Conservation Practice Standard: Residue and Tillage Management, No Till (Code 329). May 2018. Accessed 07/11/2024. *https://efotg.sc.egov.usda.gov/api/CPSFile/23957/329_AL_CPS_Residue_and_Tillage_Management_No_Till_2018*

[5] Natural Resources Conservation Service. 2006. Conservation Practice Standard: Conservation Cover (Code 327). July 2006. Accessed 07/11/2024. *https://efotg.sc.egov.usda.gov/api/CPSFile/21255/327_AL_CPS_(Con)servation_Cover_2006*

[6] Natural Resources Conservation Service. 2018. Conservation Practice Standard: Contour Farming (Code 330). January 2018. Accessed 07/11/2024. *https://efotg.sc.egov.usda.gov/api/CPSFile/21265/330_AL_CPS_(Con)tour_Farming_2018*

[7] Natural Resources Conservation Service. 2018. Conservation Practice Standard: Contour Buffer Strips (Code 332). January 2018. Accessed 07/11/2024. *https://efotg.sc.egov.usda.gov/api/CPSFile/21275/332_AL_CPS_(Con)tour_Buffer_Strips_2018*

[8] Natural Resources Conservation Service. 2018. Conservation Practice Standard: Filter Strip (Code 393). January 2018. Accessed 07/11/2024. *https://efotg.sc.egov.usda.gov/api/CPSFile/21281/393_AL_CPS_Filter_Strip_2018*

waters. These resources include targeted technical assistance articles and videos that promote BMPs for conservation tillage,[9] cover crops,[10] and explain the benefits of ground cover on infiltration and reducing runoff.[11]

Alabama Coastal Nonpoint Program Control Program (ACNPCP) staff participate in the NRCS State Technical Committee to improve connections and integration with the program, provide field technical assistance to NRCS conservationists, and participate in landowner consultations with the NRCS to identify proper BMP selection and implementation.[12] For new farms that the Technical Committee determines to be in highly erodible lands, farmers develop conservation plans that include conservations systems and agricultural BMPs with assistances from the Technical Committee. [13] In 2014, the ACNPCP executed contracts with local SWCDs in Baldwin and Mobile Counties to promote the use of innovative equipment such as the No-Till Grain Drills.[14] The program provides the farming community with access to state-of-the-art no-till drills, which allows farmers to plant without tilling the soil, which can increase erosion risk. In addition, ACNPCP staff promote the use of ACES's *Water Quality Handbook* which provides information about BMPs to reduce polluted runoff, including erosion and sediment control from agricultural activities.

In addition to the technical assistance programs, Alabama has several grant and cost-share programs that support implementation of erosion and sediment control BMPs on agriculture lands such as Alabama's Agriculture and Conservation Development Commission Cost Share Program. The State also helps promote and provides technical assistance to farmers applying to NRCS's Environmental Quality Incentives Program (EQIP) and Conservation Reserve Program.[15,16,17]

Facility Wastewater and Runoff from Confined Animal Facility Management (Large and Small)

---

[9] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Conservation Tillage. Accessed 07/11/2024. *https://www.aces.edu/blog/tag/conservation-tillage/?c=row-crop-soils&orderby=title*

[10] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Cover Crops. Accessed 07/11/2024. *https://www.aces.edu/blog/tag/row-cover-crops/?c=specialty-crops-soils&orderby=title*

[11] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Benefits of Forage Ground Cover: Infiltration and Runoff Reduction. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/forages-hay-soils/benefits-of-forage-ground-cover-infiltration-and-runoff-reduction/*

[12] Natural Resources Conservation Service. Alabama State Technical Committee. Accessed 07/11/2024. *https://www.nrcs.usda.gov/conservation-basics/conservation-state/alabama/technical-committee*

[13] Natural Resources Conservation Service. (undated). Conservation Compliance for Highly Erodible Land. (website). Accessed 07/11/2024. *https://www.nrcs.usda.gov/getting-assistance/compliance/conservation-compliance-for-highly-erodible-land*

[14] Alabama Department of Environmental Quality. 2022. Integrated Water Quality Monitoring and Assessment Report. Water Quality in Alabama 2020-2022. June 16. 2022. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/2022AL-IWQMAR.pdf*

[15] Alabama A&M University. 2023. Conservation Reserve Program Workshop. Accessed 07/11/2024. *https://www.aamu.edu/calendar/index.php?eID=3323*

[16] Alabama Soil and Water Conservation Committee. Alabama Agricultural and Conservation Development Commission Program. Not Dated. Accessed 07/11/2024. *https://alabamasoilandwater.gov/cip/*

[17] National Resources Conservation Service. Conservation Reserve Program. Not dated. Accessed 07/11/2024. *https://www.nrcs.usda.gov/programs-initiatives/crp-conservation-reserve-program*

The goal of this management measure is to limit the discharge from the confined animal facilities to surface waters by:

For large units:

1. Storing both the facility wastewater and the runoff from confined animal facilities that is caused by storms up to and including a 25-year, 24-hour frequency storm. Storage structures should:
    a. Have an earthen lining or plastic, membrane lining or
    b. Be constructed with concrete, or
    c. Be a storage tank.
2. Managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

For small units:

1. Design and implement systems that collect solids, reduce contaminant concentrations, and reduce runoff to minimize the discharge of contaminants in both facility wastewater and in runoff that is caused by storms up to and including a 25-year, 24-hour frequency storm. Implement these systems to substantially reduce significant increases in pollutant loadings to groundwater.
2. Manage stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

Alabama's strategy to implement these management measures throughout the State's coastal nonpoint management area incorporates both regulatory and voluntary approaches. Alabama Department of Environmental Management (ADEM) Administrative Code Chapter 335-6-7 establishes an Animal Feeding Operation (AFO) compliance assistance and assurance program and a Concentrated Animal Feeding Operation (CAFO) National Pollutant Discharge Elimination System (NPDES) Registration-by-Rule program. Under the rules, all CAFOs are required to register with ADEM and all AFOs and CAFOs are required to implement and maintain effective BMPs for animal waste production, storage, treatment, transport, and proper disposal or land application that meet or exceed the NRCS technical standards and guidelines (ADEM Admin. Code r. 355-6-7-.20(1-2)) and r. 355-6-7-.20(23). Alabama defines AFOs as any facility where animals have been confined or concentrated for more than 45 days during a year which encompasses the 6217(g) definition of large and small confined animal facilities (ADEM Admin. Code r. 355-6-7-.02(h)). Facilities must be designed, constructed, operated, and maintained to contain contaminated stormwater resulting from runoff generated by a 25-year, 24-hour storm event (ADEM Admin. Code r. 355-6-7-.20(22)). In addition, owners/operators of AFOs shall fully implement and regularly maintain comprehensive waste management system BMPs and owners/operators of CAFOs shall fully implement and regularly maintain comprehensive BMPs that meet or exceed NRCS technical standards and guidelines (ADEM Admin. Code r. 355-6-7-.21(1)). Also, all storage facility liners "must be designed, constructed, and maintained to prevent leaking and control seepage in a manner that meets or exceeds NRCS technical standards and guidelines" (ADEM Admin. Code r. 355-6-7-.25(2)(f)). These requirements are consistent with the 6217(g) management measures for facility wastewater and runoff from confined animal facility management (large and small units).

Alabama implements the waste utilization element of the confined animal facility management measures through the same active voluntary technical and financial assistance effort introduced in the erosion and sediment control section above, which encourages the use of the NRCS FOTG for waste utilization (FOTG Code 633).[18]

Nutrient Management
The goal of the agriculture management measure for nutrient management is to develop, implement, and periodically update a nutrient management plan to: (1) apply nutrients at rates necessary to achieve realistic crop yields, (2) improve the timing of nutrient application, and (3) use agronomic crop production technology to increase nutrient use efficiency. When the source of the nutrients is other than commercial fertilizer, determine the nutrient value and the rate of availability of the nutrients. Determine and credit the nitrogen contribution of any legume crop. Soil and plant tissue testing should be used routinely. Nutrient management plans contain the following core components:

1. Farm and field maps showing acreage, crops, soils, and waterbodies.
2. Realistic yield expectations for the crop(s) to be grown, based primarily on the producer's actual yield history, State Land Grant University yield expectations for the soil series, or SCS Soils-5 information for the soil series.
3. A summary of the nutrient resources available to the producer, which at a minimum include:
    a. Soil test results for pH, phosphorus, nitrogen, and potassium
    b. Nutrient analysis of manure, sludge, mortality compost (birds, pigs, etc.), or effluent (if applicable)
    c. Nitrogen contribution to the soil from legumes grown in the rotation (if applicable), and
    d. Other significant nutrient sources (e.g., irrigation water).
4. An evaluation of field limitations based on environmental hazards or concerns, such as:
    a. Sinkholes, shallow soils over fractured bedrock, and soils with high leaching potential
    b. Lands near surface water
    c. Highly erodible soils, and
    d. Shallow aquifers.
5. Use of the limiting nutrient concept to establish the mix of nutrient sources and requirements for the crop based on a realistic yield expectation.
6. Identification of timing and application methods for nutrients to: provide nutrients at rates necessary to achieve realistic crop yields; reduce losses to the environment; and avoid applications as much as possible to frozen soil and during periods of leaching or runoff.
7. Provisions for the proper calibration and operation of nutrient application equipment.

Alabama meets the nutrient management measure through its AFO/CAFO NPDES permits, and technical assistance that promotes the NRCS FOTG 590 (Nutrient Management) and BMP

[18] Natural Resources Conservation Service. Conservation Practice Standard: Waste Recycling (Code 633). December 2018. Accessed 07/11/2024.
https://efotg.sc.egov.usda.gov/api/CPSFile/25015/633_AL_CPS_Waste_Recycling_2018

guides, such as ACES's *Best Management Practices for Broiler Operations,*[19] *Alabama Beef Handbook,*[20] and *Starting a Dairy Cow Operation.*[21] ACES promotes the BMPs in its guides through direct technical assistance, workshops, and articles on its website.

As noted in the previous AFO/CAFO section, Alabama's NPDES rules for AFO and CAFO require an NRCS-approved waste management system plan (ADEM Admin. Code r. 335-6-7-.20). ADEM's AFO/CAFO Comprehensive Waste Management System Plan checklist provides additional guidance on what a required waste management system plan must include.[22] In conformity with the first element of the 6217(g) nutrient management measure, the plan must include an aerial photo or topographic map of the area showing acreage, crops, soils, waterbodies, and all fields where nutrients (either fertilizer or manure) will be applied. The plan needs to discuss recent soil test results (within the last three years) and nutrient resources available for application (e.g., nutrient content of manure to be applied) consistent with the third element of the management measure. The plan must also consider environmentally sensitive areas (e.g., sinkholes, adjacent waterways) that may limit field nutrient application consistent with the fourth element of the nutrient management measure. A minimum buffer distance of 50 feet from surface waters and 200 feet from Outstanding National Resource Waters and Outstanding Alabama Water must be maintained when applying animal waste (ADEM Admin. Code r. 335-6-7.26(2)(c)). In addition, the checklist states that plans need to include all applicable NCRS FOTG 590 nutrient management best management practices necessary to ensure the protection of water quality.

ACES extension staff provide technical assistance to all farmers, not just those required to develop Waste Management System Plans, in developing nutrient management plans consistent with NCRS FOTG 590 to addresses the nutrient management measure for both manure and chemical application of nutrients on cropland. In addition to including maps depicting crops, soils, water bodies and other environmentally sensitive resources are located, FOTG 590 calls for soil tests, the evaluation of nutrient sources (e.g., analysis of nutrients in manure and the consideration of nitrogen from legume cover crops), the development of site-specific yield maps and data to further diagnose low- and high-yield areas, and the application of nutrients based on expected crop yields consistent with elements two and three of the nutrient management measure. FOTG 590 also notes that farmers consider cropping system limits and nutrient needs when planning nutrient application and to ensure application does not occur when soils are frozen or saturated consistent with elements four and five of the nutrient management measure. Consistent with element six, the nutrient management plans must also conduct nutrient risk

[19] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Nutrient Management Planning for Broiler AFOs. 2019. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/poultry/nutrient-management-planning-for-broiler-afos/*

[20] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2018. Alabama Beef Handbook. August 2018. ANR-1323. Accessed 07/11/2024. *https://www.aces.edu/wp-content/uploads/2019/05/ANR-1323_Alabama-Beef-Handbook_090718.pdf*

[21] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Starting a Dairy Cow Operation. 2021. ANR-0529. Accessed 07/11/2024. *https://www.aces.edu/wp-content/uploads/2021/05/ANR-0529-StartingDairy_051821L-G.pdf*

[22] Alabama Department of Environmental Management. AFO/CAFO Comprehensive Waste Management System Plan checklist. May 2019. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/AFO-CAFO-COMPREHENSIVE-WMSP-INFORMATION-REVIEW-CHECKLIST.pdf*

analyses to determine how likely nitrogen and phosphorus are to leach from the site and factor these results into the planned nutrient application rate and timing. FOTG 590 also recommends calibration and maintenance of nutrient application equipment in accordance with the manufacturer's recommendations and/or ACES recommendations to ensure accurate distribution of material at planned rates consistent with element seven of the nutrient management measure.

ACES extension staff also provide additional training and guidance to farmers on nutrient management BMPs. For example, the *Best Management Practices for Broiler Operations* publication provides information to help the owner/operator of a broiler facility to develop a simple nutrient management plan to guide nutrient applications on all fields and crops.[23] The *Alabama Beef Handbook* similarly includes a wide range of guidance on all aspects of beef farming, including minimizing impacts to water quality through good nutrient management.[24] The handbook recommends sending soil and manure litter for testing when planning manure application to pasture lands and states that manure applications should be catered to fit the crop or pasture needs. Buffers must also be maintained around identified environmentally sensitive resources when manure is applied. The ACES website also promotes agriculture BMPs for water quality that include limiting the amount of fertilizer and nutrients used by applying the amount a crop needs based on a realistic yield expectation, and managing the amount, form, method, and timing of application.[25] The *Starting a Dairy Cow Operation* publication directs producers to consult with ADEM and their local USDA Soil Conservation Service office for guidance on waste management.[26]

Protecting Water Quality of Alabama's Farms[27] also promotes the use of sound nutrient management techniques to prevent or minimize runoff into surface waters, including reducing the amount of fertilizer used by applying only the amount a crop needs. It involves managing the amount, form, methods, and timing of nutrient application (either animal waste, commercial fertilizers, or other forms of nutrients).

Pesticide Management
The goal of the agriculture management measure for pesticide management is to reduce contamination of surface water and ground water from pesticides through the:

1. Evaluation of pest problems, previous pest measures, and cropping history.

[23] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2007. Nutrient Management Planning for Broiler AFOs. ANR-0926. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/poultry/nutrient-management-planning-for-broiler-afos/*
[24] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2018. Alabama Beef Handbook. December 2018. ANR-1323. Accessed 07/11/2024. *https://www.aces.edu/wp-content/uploads/2019/05/ANR-1323_Alabama-Beef-Handbook_090718.pdf*
[25] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2019. Agricultural Best Management Practices for Water Quality. October 2019. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/crop-production/agricultural-best-management-practices-for-water-quality/*
[26] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Starting a Dairy Cow Operation. 2021. ANR-0529. Accessed 07/11/2024. *https://www.aces.edu/wp-content/uploads/2021/05/ANR-0529-StartingDairy_051821L-G.pdf*
[27] Alabama Soil and Water Conservation Committee. 1995. Protecting Water Quality on Alabama's Farms. Accessed 07/11/2024. *https://www.adem.alabama.gov/programs/water/nps/files/pwqaf.pdf*

2. Evaluation of soil and physical characteristics of the site including mixing, loading, and storage areas for potential leaching or runoff of pesticides. If leaching or runoff is found to occur, steps should be taken to prevent further contamination.
3. Use of integrated pest management strategies that apply pesticides only when an economic benefit to the producer and when runoff losses are unlikely.
4. Consideration of the persistence, toxicity, runoff potential, and leaching potential of products when pesticide applications are necessary and a choice of registered materials exists.
5. Periodic calibration of pesticide spray equipment, and
6. Use of anti-backflow devices on hoses used for filling mixture tanks.

All commercial and private pesticide applicators must pass a certification exam (Alabama Admin Code r. 80-1-13-.08 and r. 80-1-13-.09). Both exams require applicators to be able to recognize local environmental conditions and implement BMPs to prevent the contamination of surrounding waterbodies. A practical knowledge of the principles and practices of pest control and safe use of pesticides are tested based on examples of problems and situations appropriate to the category or subcategory of the applicator's certification in the following areas of competency.

1. Environment: such as weather and climatic conditions, terrain and soil type, presence of fish and wildlife, and drainage patterns.
2. Pests: such as recognition of relevant pests, pest development and biology.
3. Pesticides: such as types of understanding of pesticides, formulations, use of pesticides, and potential environmental consequences such as persistence, toxicity, residue hazards, and runoff potential, from the use and misuse of pesticides including, cropping history, mixing, loading, and storage areas for potential leaching or runoff of pesticides.
4. Equipment: factors including equipment advantages and limitations, use, maintenance, and calibration.
5. Application Techniques: methods of procedure with knowledge of situational technique application, discharge and placement relationship to proper use, unnecessary use and misuse, and prevention of drift and pesticide loss to the environment.

ACES promotes pesticide management practices consistent with the 6217(g) guidance through various trainings, guidance documents and technical assistance. The Alabama Pesticide Safety Education Program trains all pesticide handlers and agricultural workers who mix, load, apply, or perform tasks with pesticides.[28] For example, ACES hosts a biennial Pesticide Applicators University two-day training conference that offers hands-on instruction for pesticide applicators and covers pest identification, evaluation of pest problems, consideration of previous measures, cropping history, and aquatic and public health concerns such as soil characteristics, storage potential, and runoff potential.[29] Participants also learn about product selection and management, integrated pest management, and periodic equipment calibration. ACES offers

[28] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Not Dated. Alabama Pesticide Safety Program Training. Accessed 07/11/2024. *https://www.aces.edu/blog/category/farming/pesticides/*
[29] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2022 Pesticide Applicators University. November 1-2, 2022. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/products-programs-pesticides/pesticide-applicator-university/*

private and commercial pesticide applicator training courses and an online training program.[30] The online training covers topics such as proper understanding, use, handling and storage for pesticides, equipment calibration, and application techniques. ACES also promotes using anti-back flow devices on hoses for filling mixture tanks and maintaining an air gap between the end of the hose and chemicals to prevent backflow and back-siphoning through educational blog posts.[31] Biological, mechanical, and cultural BMPs are suggested including the evaluation of soil and physical characteristics of the site including mixing, loading, and storage areas for potential leaching or runoff of pesticides.[32]

ACES offers multiple integrated pest management (IPM) resources and training events that include information that is consistent with the 6217(g) guidance including, the evaluation of pest problems, previous pest measures, and cropping history as well as using IPM strategies that apply pesticides only when economically beneficial to the producer or when runoff losses are unlikely.[33] In one publication, ACES recommends employing a variety of IPM BMPs such as planting "trap crops" to deter pest feeding on the main crop, installing lures and traps to capture pest insects, and only applying short-lived environmentally-friendly insecticides that do minimal to no harm when pest levels would cause economic losses.[34] Biological controls such as releasing natural insect enemies, mechanical controls (plowing and cultivating), and cultural controls such as planting insect resistant varieties, crop rotation, and destroying pest refuge sites are also recommended.[35] When pesticides must be applied, the objective is to select the least toxic product possible and strictly follow all application guidelines.

In addition, the FOTG for Integrated Pest Management (IPM), Pest Management Conservation System Job Sheet, and Agronomy Technical Note 4 discuss the need to regularly calibrate pesticide spray equipment and to apply pesticides only when there will be an economic benefit to the producer.[36,37]

---

[30] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2022. Private Pesticide Applicator Training Classes. 2022. Accessed 07/11/2024. *https://aces.catalog.auburn.edu/courses/private-pesticide-applicator-training-and-exam---2024*

[31] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). November 29, 2022. Avoid Pesticide Misuse. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/farming/avoid-pesticide-misuse/*

[32] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). October 23, 2019. Agricultural Best Management Practices for Water Quality. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/crop-production/agricultural-best-management-practices-for-water-quality/*

[33] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). (undated) Integrated Pest Management (IPM) (website). Accessed 07/11/2024. *https://www.aces.edu/blog/category/farming/ipm-farming/*

[34] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2018. Basics of Integrated Pest Management. September 28, 2018. Accesses 07/11/2024. *https://www.aces.edu/blog/topics/ipm-farming/basics-of-integrated-pest-management/*

[35] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2019. Agricultural Best Management Practices for Water Quality. October 23, 2019. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/crop-production/agricultural-best-management-practices-for-water-quality/*

[36] Natural Resources Conservation Service. 2011. Conservation Practice Standard: Integrated Pest Management (Code 595). August 2011. Accessed 07/11/2024. *https://efotg.sc.egov.usda.gov/api/CPSFile/24907/595_AL_CPS_Integrated_Pest_Management_2011*

[37] Natural Resources Conservation Service. 2012. 595 AL IR Pest Management Conservation System Job Sheet. November 2012. Job Sheet No. AL595-1. Accessed 07/11/2024. *https://efotg.sc.egov.usda.gov/#/state/AL/documents/section=4&folder=-115*

Grazing Management
The grazing management measure protects range, pasture, and other grazing lands:

1. By implementing, one or more of the following to protect sensitive areas (such as streambanks, wetlands, ponds, and riparian zones):
    a. Exclude livestock,
    b. Provide stream crossings or hardened watering access for drinking,
    c. Provide alternative drinking water locations,
    d. Locate salt and additional share, if needed away from sensitive areas, or
    e. Use improved grazing management (e.g., herding); and
2. By achieving either of the following on all range, pasture, and other grazing lands not addressed under (1):
    f. Implement the range and pasture components of the Conservation Management System (CMS) or
    g. Maintain range, pasture, and other grazing lands in accordance with activity plans established by either the Bureau of Land Management or the U.S. Department of the Interior or Forest Service of the USDA.

Alabama addresses the grazing management measure through its ACES technical assistance and education and outreach efforts to farmers. For example, the Alabama Beef Handbook and Drinking Water for Livestock brochure both state that farmers need to fence or limit livestock access to ponds or other surface waters (streams) consistent with the 6217(g) grazing management measure.[38,39]

Irrigation Water Management
To reduce nonpoint source pollution of surface waters caused by irrigation, the irrigation management measure calls on states to:

1. Operate the irrigation system so that the timing and amount of irrigation water applied match crop water needs
2. When chemigation is used, include backflow preventers for wells, minimize the harmful amounts of chemigated waters that discharge from the edge of the field, and control deep percolation.

ACES promotes best management practices consistent with the irrigation management measure through its outreach materials and technical assistance. The NRCS FOTG for Irrigation Water Management (FOTG 449) recommends developing an irrigation water management plan that uses evapo-transportation rate of the crop and/or soil moisture data to determine the timing and

[38] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2018. Alabama Beef Handbook. August 2018. ANR-1323. Accessed 07/11/2024. *https://www.aces.edu/wp-content/uploads/2019/05/ANR-1323_Alabama-Beef-Handbook_090718.pdf*
[39] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2018. Drinking Water for Livestock. December 6, 2018. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/beef/drinking-water-for-livestock/*

amount for each irrigation event.[40] The FOTG also states that farmers should ensure that the irrigation and delivery system is equipped with properly designed and operating valves and components to prevent backflows into the water source or groundwater contamination. The NRCS IPM FOTG also includes best practices for chemigation, such as the inclusion of back-flow preventors on wells, that are consistent with the 6217(g) management measure.[41] In addition, an ACES brochure related to scheduling irrigation events in vegetable crops also notes the importance of matching crop water needs when determining the time and rate of irrigation.[42]

Enforceable Policies and Mechanisms for Agriculture Management Measures
To support implementation of the voluntary-based approaches for the agriculture management measures, Alabama provided a legal opinion from the Attorney General stating that the Alabama Water Pollution Control Act (Ala. Admin. Code r. 22-22-1 to 22-22-14 (1997)) provides ADEM with the authority to require the implementation of management measures to prevent nonpoint source pollution to coastal waters, when needed.[43] ADEM also provided a follow-up letter clarifying that the State could specifically require implementation of the 6217(g) management measures.[44] The State has described the mechanisms that link the implementing agencies (ADEM, local governments) with the enforcing agency (ADEM) and provided a letter stating its commitment to use its backup authority to implement the 6217(g) management measures, when needed.[45] Alabama tracks and evaluates voluntary implementation of the agriculture management measures through several mechanisms. Local SWCDs track agriculture BMPs that are implemented through NRCS programs whereas ADEM tracks BMPs implemented with Clean Water Act (CWA) section 319 funding through the CWA section 319 annual reports. Alabama also tracks and evaluates agricultural BMP implementation across the coastal nonpoint management area through its watershed management plans and Coastal Water Monitoring Programs. Ambient monitoring and watershed planning efforts are used to assess overall BMP implementation effectiveness and to identify areas to target for further implementation.

III. FORESTRY

[40] Natural Resources Conservation Service. 2016. Conservation Practice Standard: Irrigation Water Management (Code 449). April 2016. Accessed 07/11/2024.
https://efotg.sc.egov.usda.gov/api/CPSFile/24277/449_AL_CPS_Irrigation_Water_Management_2016
[41] Natural Resources Conservation Service. 2011. Conservation Practice Standard: Integrated Pest Management (Code 595). August 2011. Accessed 07/11/2024.
https://efotg.sc.egov.usda.gov/api/CPSFile/24907/595_AL_CPS_Integrated_Pest_Management_2011
[42] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2022. Scheduling Irrigation Events in Vegetable Crops. November 15, 2022. Accessed 07/11/2024. *https://www.aces.edu/blog/topics/crop-production/scheduling-irrigation-events-in-vegetable-crops/*
[43] Letter from Bill Pryor, Alabama Attorney General to James W. Warr, Director Alabama Department of Environmental Management, February 15, 2002.
[44] Letter from Harry A. Lyles, Associate General Counsel, Alabama Department of Environmental Management to Dov Whitman (sic), Chief Nonpoint Source Control Branch, U.S. Environmental Protection Agency and Josh Lott, Coastal Management Specialist, NOAA's Office of Ocean and Coastal Resource Management, RE: Legal Opinion--Adequacy of the authorities of the Alabama Department of Environmental Management. June 11, 2003.
[45] Letter from J. Scott Brown, Chief of the Mobile Field Office, Alabama Department of Environmental Management to Allison Castellan, NOAA Office for Coastal Management and Don Waye, EPA Nonpoint Source Management Branch, RE: ADEM's Authority and Commitment to Prevent Non-Point Source Pollution. June 21, 2022.

1998 FINDING: Alabama's program includes management measures in conformity with the 6217(g) guidance. The State has proposed a strategy which is based on the existing Memorandum of Agreement between ADEM and the Alabama Forestry Commission (AFC) and has identified back-up enforceable policies and mechanisms for implementing the management measures, but has not yet demonstrated the ability of the strategy and authorities to ensure widespread implementation throughout the coastal nonpoint management area.

1998 CONDITION: Within three years, Alabama will demonstrate the ability to achieve widespread implementation of the forestry management measures throughout the coastal nonpoint management area using credible survey tools.

DECISION: Alabama has satisfied this condition.

RATIONALE: As part of the 1998 approval of Alabama's coastal nonpoint program, NOAA and EPA found that the State's voluntary forestry BMP manual, *Alabama's Best Management Practices for Forestry* (forestry manual), included practices consistent with the 6217(g) forestry management measures. The State had identified back-up authorities (Alabama Water Pollution Control Act (Ala. Code §22-22-1)) and had also provided examples of enforcement actions taken to ensure implementation of the 6217(g) management measures, demonstrating a commitment to use its back-up authorities, when needed. However, as the 1998 condition notes, the State had not demonstrated its ability to achieve widespread implementation of the forestry management measures throughout the coastal nonpoint management area. Since then, Alabama has continued to implement and expand its existing, statewide forestry programs and has demonstrated the ability to ensure widespread implementation of the forestry management measures throughout the coastal nonpoint management area (Baldwin and Mobile counties).

Alabama continues to promote forestry BMPs that align with the 6217(g) management measures through the forestry manual, updated in 2007, as well as through a variety of technical assistance and education and outreach efforts.[46] For example, ACES produced and distributes the *Best Management Practices for Timber Harvesters* pamphlet that includes BMPs consistent with the 6217(g) forestry management measures for streamside management areas, road construction and management, and timber harvesting.[47] In addition to distributing BMP manuals, publications, videos, and other technical resources, AFC provides onsite technical assistance to forestry operators. This assistance focuses on the planning and implementation of forestry BMPS.[48] They also sponsor BMP demonstration projects and host countywide forestry tours to train foresters on good BMP implementation. In addition, the AFC also provides BMP training courses to its own staff to ensure uniform understanding of the statewide BMP manual among the regional and county foresters.

[46] Alabama Forestry Commission. 2007. *Alabama's Best Management Practices for Forestry*. Accessed 07/11/2024. *https://forestry.alabama.gov/Pages/Management/Forms/2007_BMP_Manual.pdf*
[47] Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). 2018. Best Management Practices for Timber Harvesters. February 2018. Accessed 07/11/2024. *https://www.aces.edu/wp-content/uploads/2018/08/ANR-0539.REV_.2.pdf*
[48] Alabama Forestry Commission. Undated. Professional Forestry Assistance (website). Accessed 07/11/2024. *https://www.forestry.alabama.gov/Pages/Management/ForestAssistance.aspx*

AFC and ADEM work together to conduct routine monitoring of forestry BMP implementation.[49] The monitoring efforts include randomized compliance monitoring on active forestry operations as well as compliant-based inspections. The AFC designed its randomized compliance monitoring to be statistically valid for determining BMP implementation at the statewide level. Typically, six to eight sites are selected for inspection in each county. In 2019, the AFC conducted compliance monitoring at 256 randomly selected sites across the state and found a 98 percent compliance rate.[50] The compliance monitoring demonstrated 100 percent compliance with the forestry management measures for the 10 sites monitored in the two-county coastal nonpoint management area.[51] Monitoring of BMP compliance is conducted in accordance with *Silviculture Best Management Practices Implementation Monitoring: A Framework for State Forestry Agencies.*[52,53]

The Memorandum of Agreement (MOA) between the AFC and ADEM ensures that potential water quality violations from silviculture activities discovered during compliant-based and routine compliance monitoring are addressed and enforcement actions taken, when necessary.[54] As described in the MOA, complaints stemming from forestry related activities are routed to AFC by ADEM for initial investigation, provided that no imminent threats to water quality or human health exist. Prior to initiation of enforcement activities, AFC is given the opportunity to work cooperatively with the landowner or managers to resolve the issue within a limited time period. ADEM will initiate enforcement action if an imminent threat to water quality or human health is present, or after a period of 45 days, it is apparent that the issue will not be remedied through cooperative efforts. AFC provides ADEM with a quarterly report on BMP or water quality related complaints, tips, or discoveries and of all routine, random, and follow-up inspections conducted by AFC staff. In return, ADEM provides AFC with quarterly updates on all inspection and enforcement actions taken regarding forestry activities.

IV. URBAN

A. NEW DEVELOPMENT AND SITE DEVELOPMENT

1998 FINDING: Alabama's program does not include management measures in conformity with the 6217(g) guidance. The State has identified back-up enforceable policies and

[49] Alabama Department of Environmental Management. (undated). Forestry BMP Program (website) Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/forestry.cnt*

[50] Alabama Forestry Commission. (undated). Alabama's Best Management Practices for Forestry (website). See drop down menu for "2019 Achievements." Accessed 07/11/2024. *https://forestry.alabama.gov/Pages/Management/BMP_Practices.aspx*

[51] Alabama Forestry Commission. 2019. FY19 BMP Ground Checks-IMP Rates FINAL (unpublished data).

[52] Southern Group of State Foresters. 2007. Silviculture Best Management Practices Implementation Monitoring: A Framework for State Forestry Agencies. Accessed 07/11/2024. *https://www.ncforestservice.gov/water_quality/pdf/silviculture_best_management_practices_implementation_monitoring_a_framework_for_state_forestry_agencies.pdf*

[53] Alabama Forestry Commission. (undated). Best Management Practices Monitoring Policies and Procedures.

[54] Alabama Forestry Commission and Alabama Department of Environmental Management. 2017. Memorandum of Agreement Between the Alabama Forestry Commission and the Alabama Department of Environmental Management. Executed August 22, 2017.

mechanisms for implementing these management measures, but has not yet demonstrated the ability of the authorities to ensure widespread implementation throughout the coastal nonpoint management area.

1998 CONDITION: Within three years, Alabama will include in its program management measures that are in conformity with the 6217(g) guidance management measures for new development and site development. Within one year, Alabama will develop a strategy (in accordance with Section XIV, page 13 of the 1998 findings document) to implement these management measures throughout the coastal nonpoint management area.

DECISION: Alabama has satisfied this condition.

RATIONALE: Alabama addresses the new development and site development management measures through a mix of regulatory and voluntary approaches. The State's Construction General Permit (ALR100000)[55] and local ordinances provide direct regulatory authority for the site development management measure. Local ordinances also support portions of the new development management measure. In addition, Alabama relies on voluntary-based approaches including the *Alabama Handbook for Erosion Control*, *Sediment Control and Stormwater Management on Construction Sites and Urban Areas (Handbook for Stormwater Management)*[56] and the *Alabama Low Impact Development Handbook*[57] to address other aspects of these management measures. The State has also developed a targeted strategy to work with communities within the coastal nonpoint management area to adopt and/or strengthen existing local stormwater ordinances to be fully consistent with the new development management measure.

New Development
The new development management measure calls on states to:

1. By design or performance to:
    a. After construction has been completed and the site is permanently stabilized, reduce the average total suspended solid (TSS) loadings by 80 percent based on a 2-year/24-hour design storm, or
    b. Reduce the post-development loadings of TSS so that the average annual TSS loadings are no greater than pre-development levels.
2. To the extent practicable, maintain post-development peak runoff rate and average volume at levels that are similar to pre-development levels.

State coastal nonpoint programs are no longer required to address the new development management measure in urbanized areas subject to Phase I or Phase II NPDES municipal

[55] Alabama Department of Environmental Management. National Pollution Discharge Elimination System General Permit. 2021. Accessed 07/11/2024. *http://adem.alabama.gov/programs/water/waterforms/ALR21CGP.pdf*
[56] Alabama Soil and Water Conservation Committee. Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas. 2018. Accessed 07/11/2024. *https://alabamasoilandwater.gov/wp-content/uploads/2021/03/2018-Handbook-Vol-1.pdf*
[57] Alabama Department of Environmental Management in cooperation with the Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Low Impact Development Handbook for the State of Alabama. not dated. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf*

separate storm sewer systems (MS4) permits because these regulations are redundant with this management measure for those permitted areas. States still need to have programs and authorities in conformance with the 6217(g) new development management measure to address new development occurring outside of NPDES permitted urbanized areas. See NOAA and EPA's 2002 memorandum, "Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations".[58] Under the 2002 policy clarification, management measures in conformance with the 6217(g) guidance are still necessary for new developments occurring outside of NPDES-permitted urbanized areas (i.e., urban clusters). Portions of Alabama's coastal nonpoint management area are designated as MS4 areas, including the cities of Mobile, Prichard, Saraland, Satsuma, Grand Bay and Bayou La Batre in Mobile County as well as the cities of Daphne, Fairhope and Spanish Fort in Baldwin County.

There are five urban clusters within the coastal nonpoint management area that are not designated MS4s: Foley, Gulf Shores, Orange Beach, Robertsdale, and Bay Minette. All of these communities are located in Baldwin County and all but Bay Minette already have ordinances in place to ensure that the post-development peak runoff rate and average volume is no greater than pre-development levels, consistent with the second element of the new development management measure. The Code of Ordinances of Foley (City of Foley) requires that the first flush of runoff (1.25 inches) be treated, infiltrated, or reused onsite to the maximum extent practicable using LID techniques. If LID techniques are not employed due to site constraints, a detention basin must detain the first 1.25 inch of runoff from 2-year, 5-year, 10-year, 25-year, 50-year and 100-year 24-hour design storms so that runoff is released gradually at or below pre-development peak flow rates (Sec. 4-3-2).[59] The City of Orange Beach Stormwater Management Ordinance requires that the post-development peak rate of surface discharge must not exceed the pre-development peak discharge rate for the 25-year, 24-hour storm (Sec. 42-312).[60] In addition, retention systems need to provide the storage capacity for the specified treatment volume of stormwater within 72 hours following a storm event and swales shall be designed to percolate 80 percent of the runoff from a 3-year/1-hour design storm within 72 hours after a storm event" which is on par with the 6217(g) management measures (Sec. 42-312). The Gulf Shores Zoning Ordinance also requires that post-development runoff does not exceed the maximum pre-development discharge rate (Sec. 10-10-D.5)[61] while the City of Robertsdale's Land Use Ordinance stipulates, "post-development release rates shall not exceed pre-development rates" (Sec. 15.2.B.11).[62] If a development in Robertsdale cannot abide

[58] NOAA and EPA. 2002. "Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Stormwater Regulations." Accessed 07/11/2024.
https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

[59] Code of Ordinances City of Foley, Alabama. Ordinance No. 2202036. September 2022. Accessed 07/11/2024.
https://library.municode.com/al/foley/codes/code_of_ordinances

[60] The Code of Ordinances City of Orange Beach, Florida. Stormwater Management Regulations. July 2022. Accessed 07/11/2024.
https://library.municode.com/al/orange_beach/codes/code_of_ordinances?nodeId=COOR_CH42LADECO_ARTIVSTMARE_DIV5STMAPLRE_S42-312PECR

[61] Zoning Ordinance for the City of Gulf Shores, Alabama. July 2021. Accessed 07/11/2024.
https://www.gulfshoresal.gov/DocumentCenter/View/56/Zoning-Ordinance-as-Amended-July-12-2021-Ord-2027?bidId=

[62] City of Robertsdale Land Use Ordinance. September 2002 (Amended August 2015). Accessed 07/11/2024.
http://www.robertsdale.org/content/theme/media/Land-Use-Ordinance-2015-08-03.pdf

by this, stormwater management facilities must be constructed to address the 100-year, 24-hour storm event (16.3 inches) (Sec. 15.2.B.11).

Alabama has developed a targeted strategy to work with the five urban clusters within the coastal nonpoint management area that are not covered by a NPDES stormwater permit to strengthen their stormwater ordinances to be fully consistent with the new development management measure and adopt the *Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas* (Handbook for Stormwater Management),[63] and the *Low Impact Development Handbook for the State of Alabama* (LID Handbook).[64] First, to inform its strategy development, the ACNPCP inventoried the stormwater ordinances for all five targeted communities in 2021 to assess where gaps may exist.[65] Through the watershed management planning and update process (described in greater detail in the watershed protection section), the State is providing technical assistance and training to watershed groups to help them incorporate actions into relevant watershed management plans to strengthen existing stormwater ordinances to be fully consistent with the new development management measure. The City of Bay Minette is currently being targeted for post-development stormwater training and assistance with development of the Eastern Delta watershed management plan (WMP) that is anticipated for completion in 2024. From 2022 to 2027, using the previously mentioned City of Foley's Manual for Design and Construction Standards Ordinance as a model, the ACNPCP will work with municipalities and partners to develop post-construction model ordinances that can be adopted for use in each urban cluster.[66] The ACNPCP will also deliver accompanying training to municipal officials to educate them on the importance of stormwater management and the need for post-construction stormwater regulations.

Alabama will track and evaluate, including the number of ordinances updated to be fully consistent with the new development management measure, using a variety of mechanisms. The State will continue to update the regulatory review of stormwater ordinances for South Alabama every five years as part of its overall strategy to show the progress municipalities are making toward their regulatory goals established in their WMPs and achieving consistency with the new development management measure. The Mobile Bay National Estuary Program (MBNEP) is scheduled to conduct the next stormwater ordinance review in 2024 to determine what advances have been made through their targeted outreach and technical assistance campaign since the last

[63] Alabama Soil and Water Conservation Committee. Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas. 2018. Accessed 07/11/2024. *https://alabamasoilandwater.gov/wp-content/uploads/2021/03/2018-Handbook-Vol-1.pdf*

[64] Alabama Department of Environmental Management in cooperation with the Alabama Cooperative Extension System and Auburn University. Low Impact Development Handbook for the State of Alabama. not dated. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf*

[65] Mobile Bay National Estuary Program. South Alabama Stormwater Regulatory Review. September 2021. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Final-South-AL-Stormwater-Regulatory-Review-Update_w-appendicies.pdf*

[66] City of Foley's Manual for Design and Construction Standards Ordinance. 2017. Ordinance 17-2029-ORD. Accessed 07/11/2024. *https://mcclibraryfunctions.azurewebsites.us/api/ordinanceDownload/12253/840040/pdf?forceDownload=true*

review in 2018.[67] The MBNEP's coverage area includes all of Mobile and Baldwin counties.[68] Updates to local stormwater ordinances are also tracked through the development of new or updated WMPs. In addition, ordinance updates that are funded through ADEM's Coastal Program or ADCNR will be tracked through a separate coastal database.

The State's *Handbook for Stormwater Management* and LID Handbook also encourage BMPs consistent with the new development management measure. The Handbook for Stormwater Management notes that the volume, rate, timing and pollutant load of stormwater after development should closely approximate the pre-development conditions. The *Handbook for Stormwater Management* specifically recommends that stormwater BMPs be designed so that the peak flow rate from a 2-year storm is not exceeded after development. Construction plans prepared for sites in coastal Alabama, including the coastal nonpoint management area, must comply with the guidelines contained in the Coastal Nonpoint Pollution Control Program. It is recommended that construction practices (including detention, retention and bioretention) be designed to yield a minimum of 80 percent reduction in TSS. The LID Handbook recommends that stormwater control be designed to capture, retain, and infiltrate the first 1.5 inches (or first flush) of stormwater. By capturing and treating the first flush, the stormwater BMPs will capture 80 percent of TSS and ensure that post-development peak runoff rate and volume does not exceed pre-development levels to the maximum extent practicable, which is consistent with the new development management measure. The LID Handbook describes a variety of BMPs such as bioretention, grassed swales, infiltration swales, and constructed stormwater wetlands that, either alone or together, would achieve this goal.[69]

Alabama has demonstrated that it has enforceable policies and mechanisms in place to ensure the implementation of the voluntary components of the new development management measure. See the "Enforceable Policies and Mechanisms" subsection at the end of the new and site development section for a discussion of enforceable policies and mechanisms.

Site Development
The goal of the site development management measure is to reduce the generation of nonpoint source pollution and to mitigate the impacts of urban runoff and associated pollutants from all site development. These controls and policies are necessary to ensure that development occurs so that nonpoint source pollution concerns are incorporated during the site selection, project design and review phases and are intended to apply to individual sites rather than watershed basins or regional drainage basins. Specifically, this management measure requires the sites be planned, designed, and developed to:

1. Protect areas that provide water quality benefits and/or are susceptible to erosion and sediment loss

[67] Mobile Bay National Estuary Program. South Alabama Stormwater Regulatory Review. September 2021. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Final-South-AL-Stormwater-Regulatory-Review-Update_w-appendicies.pdf*
[68] Mobile Bay National Estuary Program Coverage Area. Accessed 07/11/2024. *https://www.mobilebaynep.com/the_landscape/the-coverage-area*
[69] Alabama Department of Environmental Management in cooperation with the Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Low Impact Development Handbook for the State of Alabama. not dated. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf*

2. Limit increases of impervious areas, except where necessary
3. Limit land disturbance activities such as clearing and grading and cut and fill to reduce erosion and sediment loss, and
4. Limit disturbance of natural drainage features and vegetation.

The State's Construction General Permit (ALR100000) addresses elements 1, 3 and 4 of the site development management measure.[70] All construction activities that result in a land disturbance of one acre or greater, and sites less than one acre but are part of a common plan of development, must adhere to the Construction General Permit. To protect areas that provide water quality benefits and/or are susceptible to erosion and sediment loss as well as limit the disturbance of natural drainage features and vegetation, the permit requires that the permittee must design, install and maintain effective stormwater, erosion and sediment controls that: control stormwater discharges to minimize soil erosion (Construction General Permit at Part III.A.2) and channel and streambank erosion and scour (Part III.A.3); minimize the disturbance of steep slopes (Part III.A.10); minimize the amount of sediment discharged from the site (Part III.A.11); and provide and maintain a 25-foot natural riparian buffer around surface waters (Part III.A.8). The permittee must also ensure that all stormwater controls are properly implemented, maintained, and remain in effective operating condition during permit coverage (Part III.A.6). The permittee must also limit the amount of soil exposed and the duration of exposure during construction (Part III.A.5 and A.7) to limit land disturbance activities, and reduce erosion and sediment loss.

The sediment and erosion control measures and BMPs used to meet the Construction General Permit must meet or exceed the technical guidance in the Handbook for Stormwater Management (Part III.A.22(a)). The Handbook for Stormwater Management includes practices that are consistent with the site development management measure.[71] Design principles include preserving natural drainage pathways and vegetated buffers. The Handbook for Stormwater Management also recommends that the perviousness of a site be maintained to the greatest extent possible and encourages planners and designers to use LID techniques and practices to minimize the amount of disturbed area and impervious surfaces consistent with elements 2 and 3 of the site development management measure. Specific BMPs to achieve these goals include preserving natural vegetative cover where possible; keeping paved areas to a minimum; using pervious paving products; designing developments with narrow streets, shared driveways and no curb and gutter; or utilizing cluster developments.

In addition, the Construction General Permit encourages permittees to design the site and stormwater control BMPs to minimize runoff both during and after construction using the LID Handbook (Part III.A.22(b)).[72] Specific practices in the LID Handbook consistent with the site

[70] Alabama Department of Environmental Management. National Pollution Discharge Elimination System General Permit. 2021. Accessed 07/11/2024. *http://adem.alabama.gov/programs/water/waterforms/ALR21CGP.pdf*
[71] Alabama Soil and Water Conservation Committee. *Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas*. 2018. Accessed 07/11/2024. *https://alabamasoilandwater.gov/wp-content/uploads/2021/03/2018-Handbook-Vol-1.pdf*
[72] Alabama Department of Environmental Management in cooperation with the Alabama Cooperative Extension System (Alabama A&M and Auburn Universities). Low Impact Development Handbook for the State of Alabama. not dated. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf*

development management measure include: designing development to avoid critical water courses, wetlands and steep slopes; preserving or minimizing impacts to natural drainage systems; retaining native vegetation; and minimizing land disturbance. The LID Handbook also promotes BMPs to limit impervious areas, encourages the use of permeable pavement and other pervious surfaces, and recommends that impervious surfaces be disconnected from the stormwater system and directed to appropriate pervious areas, to the extent possible.

Enforceable Policies and Mechanisms for New Development and Site Development
To support implementation of the voluntary-based approaches that support the new and site development management measures, Alabama provided a legal opinion from the Attorney General stating that the Alabama Water Pollution Control Act (Ala. Code r. 22-22-1 to 22-22-14 (1997)) provides ADEM with the authority to require the implementation of management measures to prevent nonpoint source pollution to coastal waters, when needed.[73] ADEM also provided a follow up letter clarifying that the State could specifically require implementation of the 6217(g) management measures.[74] The State has described the mechanisms that link the implementing agencies (ADEM, local governments) with the enforcing agency (ADEM) and provided a letter stating its commitment to using its backup authority to implement the 6217(g) management measures, when needed.[75] In addition to how Alabama specifically plans to track implementation of its targeted approach for new development described in the new development section above, the State also tracks and evaluates implementation of the voluntary elements of the site development management measure through its CWA section 319 annual reports, watershed management plans, and the MBNEP comprehensive monitoring framework.[76]

B. WATERSHED PROTECTION AND EXISTING DEVELOPMENT

1998 FINDING: Alabama's program does not include management measures in conformity with the 6217(g) guidance. The State has identified back-up enforceable policies and mechanisms for implementing these management measures, but has not yet demonstrated the ability of the authorities to ensure widespread implementation throughout the coastal nonpoint management area.

1998 CONDITION: Within three years, Alabama will include in its program management measures that are in conformity with the 6217(g) guidance management measures for watershed protection and existing development. Within one year, Alabama will develop a strategy (in

[73] Letter from Bill Pryor, Attorney General, to James W. Warr, Director, Alabama Department of Environmental Management. February 15, 2002.
[74] Letter from Harry A. Lyles, Associate General Counsel, Alabama Department of Environmental Management to Dov Whitman (sic), Chief, Nonpoint Source Control Branch, U.S. Environmental Protection Agency and Josh Loss, Coastal Management Specialist, NOAA, Office of Ocean and Coastal Resource Management. June 11, 2003.
[75] Letter from J. Scott Brown, Chief of the Mobile Field Office, Coastal Zone Management Program, Alabama Department of Environmental Management. To Allison Castellan, Office for Coastal Management, NOAA, and Don Waye, Nonpoint Source Management Branch, EPA. June 21, 2022. ADEM's Authority and Commitment to Prevent Non-Point Source Pollution.
[76] Mobile Bay National Estuary Program. Respect the Connect: Comprehensive Conservation and Management Plan. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/FINAL-CCMP-11.25.2019.pdf*

accordance with Section XIV, page 13 of the 1998 findings document[77]) to implement these management measures throughout the coastal nonpoint management area.

DECISION: Alabama has satisfied this condition.

RATIONALE: Alabama relies largely on its voluntary watershed planning program through the MBNEP to address both the watershed protection and existing development management measures. In addition to watershed planning, the State also addresses the watershed protection management measure through land protection programs and the Construction General Permit (ALR100000). The State has provided a legal opinion stating Alabama has back-up authorities to ensure implementation of the management measures, when needed, and other supporting documents demonstrating the State has a strategy to implement these management measures.

Watershed Protection
The watershed protection management measure calls for the state to develop and implement watershed protection programs to:

1. Avoid conversion, to the extent practicable, of areas that are particularly susceptible to erosion and sediment loss
2. Preserve areas that provide important water quality benefits and/or are necessary to maintain riparian and aquatic biota, and
3. Site development, including roads, highways, and bridges, to protect, to the extent practicable, the natural integrity of waterbodies and natural drainage systems.

Alabama's watershed management planning effort is a key mechanism for meeting the watershed protection management measure. ADEM and ADCNR partner with the MBNEP and other agencies, as needed, to develop and implement WMPs across the coastal nonpoint management area that protect, restore, and preserve natural areas that provide key water quality benefits or are susceptible to erosion. The watershed planning process also helps to ensure that development is sited in ways to protect the natural integrity of waterbodies and drainage systems. As of August 2023, 15 WMPs have been developed for watersheds within the coastal nonpoint management area with four more in development. As of February 2022, the MBNEP has protected over 146,000 acres of coastal habitat and placed approximately 800 acres additional under conservation easements through its watershed planning efforts.[78]

Alabama has developed a strategy to expand WMP coverage throughout the coastal nonpoint management area over the next 15 years (starting in 2022). The State is coordinating this effort with the MBNEP's Project Implementation Committee (PIC) and intends the strategy to be consistent with, and complement, the MBNEP's five-year ecosystem restoration strategy. The PIC adopted a protocol for watershed management planning at the 12-digit hydrologic unit

[77] NOAA and EPA. 1998. Alabama Coastal Nonpoint Program Findings and Conditions. June 30, 1998. Accessed 07/11/2024. *https://coast.noaa.gov/data/czm/pollutioncontrol/media/findal.txt*
[78] Mobile Bay National Estuary Program. Respect the Connect: Comprehensive Conservation and Management Plan. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/FINAL-CCMP-11.25.2019.pdf*

codes (HUC)[79] level to guide science-based WMP project development and implementation. The PIC also developed a priority list of the 23 12-digit HUCs watersheds in Baldwin and Mobile counties using 17 evaluation criteria such as the presence of impaired waters, protected lands, total maximum daily loads, percent urbanization, and data from ADEM long-term monitoring sites. Years one through five of the strategy will focus on finalizing WMPs already funded through Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies Act (RESTORE Act),[80] MBNEP, ADEM or ADCNR sources. Years three through five will focus on securing funding for WMP development in non-tidally influenced coastal waters of Alabama's coastal nonpoint management area. In years six through 10, the MBNEP and partners will re-evaluate WMP development needs based on their revisions and updates to their Comprehensive Conservation and Management Plan (CCMP) (2024). Years 11 through 15 will include a review of the previous years' method to determine if any updates or other adaptive management steps are needed. New data and information such as total maximum daily loads and 303(d) impaired lists updated every two years, additional funding sources, planned development, and changes in local ordinances/regulations, also will influence the prioritization of watersheds and WMP development.

Each WMP includes a detailed watershed assessment which identifies primary sources and causes of point and nonpoint pollution. The WMPs also include activities and implementation schedules to address priority water quality concerns identified and must include monitoring and assessment mechanisms to evaluate plan implementation.[81] The MBNEP's CCMP calls for all watershed plans to adhere to EPA's nine key elements for watershed planning and to conform to the 6217(g) management measures.[82] WMPs must also be consistent with the six coastal values identified through the MBNEP's CCMP, including protecting the water quality and hydrology of rivers, creeks and watersheds.[83] All watershed management plans developed through the MBNEP Management Conference leadership or with CWA section 319 funding are required to adhere to these requirements.[84] Applicants for watershed planning funding also need to provide confirmation of satisfying plan requirements by submitting a Watershed Management Plan Component checklist.[85]

[79] Watersheds are defined by hydrologic unit codes (HUCs). HUCs range from two digits (for the largest watersheds) to 12 digits (for the smallest watershed within those larger watersheds). HUC-12 watersheds are typically 10 to 40 thousand acres (15 to 62 mi²) in size.
[80] Alabama Gulf Coast Recovery Council. Undated. RESTORE Act (website). Accessed 07/11/2024. *https://public.dcnr.alabama.gov/pubRestoreAlabama80/Restore-Act*
[81] Mobile Bay National Estuary Program Watershed Planning. Accessed 07/22/2024. *https://www.mobilebaynep.com/watersheds/dauphin-island-watershed/the-planning*
[82] Mobile Bay National Estuary Program. Respect the Connect: Comprehensive Conservation and Management Plan. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/FINAL-CCMP-11.25.2019.pdf*
[83] Mobile Bay National Estuary Program. Respect the Connect: Comprehensive Conservation and Management Plan. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/FINAL-CCMP-11.25.2019.pdf*
[84] Mobile Bay National Estuary Program. 2021. Notice for Request for Qualifications Western Delta Watershed Management Planning. Mobile County, Alabama. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/2021_09_15_RFQ_WesternDeltaWMP.pdf*
[85] Watershed Management Plan Component Checklist for CWA Section 319 Grant Funding. Accessed 07/11/2024. *http://adem.alabama.gov/programs/water/nps/files/WatershedManagementPlanChecklist.pdf*

Examples of how specific WMPs address the watershed protection management measure include the plans developed for the Wolf Bay and the D'Olive Creek, Tiawasee Creek and Joe's Branch watersheds. To preserve areas that provide important water quality benefits and protect areas that are particularly susceptible to erosion and sediment loss, the Wolf Bay WMP identifies priority areas for conservation and acquisition and recommends riparian buffers on agricultural land where sediment concerns have been identified.[86] The Wolf Bay WMP also identifies BMPs to site development to protect the natural integrity of waterbodies and natural drainage systems. BMPs include the construction of drainage outlets that divert water into vegetated areas that serve as natural filters, the implementation of LID techniques, and the installation of detention basins, retention basins, and site stabilization. The WMP also recommends developer and contractor training to educate individuals on how to site development to protect the natural integrity of the watershed and natural drainage features. The WMP for the D'Olive Creek, Tiawasee Creek and Joe's Branch watersheds establishes a goal of no greater than 25 percent impervious cover within the watershed and prioritizes the preservation of green space, riparian buffers and adequate setbacks between urban development and streams.[87]

In addition to its watershed management planning efforts, Alabama addresses elements one and two of the watershed protection management measure by protecting its most sensitive coastal lands from development through a variety of land acquisition mechanisms. There are currently over 146,000 acres of land conserved in fee simple ownership within Alabama's coastal nonpoint management area. These lands have been conserved by entities including ADCNR, the Alabama Forever Wild Land Trust,[88] the South Alabama Land Trust,[89] Bon Secour National Wildlife Refuge,[90] Grand Bay National Wildlife Refuge,[91] and ADCNR's Weeks Bay National Estuarine Research Reserve (NERR),[92] which all include the protection of water quality among the key drivers for their land conservation work.

Several of Alabama's stormwater control efforts also support the watershed protection management measure. The Construction General Permit (ALR100000) requires a 25-foot natural riparian buffer to be developed and maintained around surface waters (Part III A.8) and adjacent to all waters of the state (Part III B) consistent with elements two and three of the watershed protection management measure.[93] The Construction General Permit also calls for

[86] Mobile Bay National Estuary Program. 2020. Wolf Bay Watershed Management Plan. Updated November 2020. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Wolf_BayWMP_web.pdf*
[87] Watershed Plan for the D'Olive Creek, Tiawasee Creek and Joe's Branch Watersheds. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/DOlive-Final-Report-Full.pdf*
[88] Forever Wild Land Trust. Accessed 07/11/2024. *https://www.alabamaforeverwild.com/forever-wild-program-overview*
[89] South Alabama Land Trust. (website). Accessed 07/11/2024. *https://southalabamalandtrust.org*
[90] United States Fish and Wildlife Service. Bon Secour National Wildlife Refuge. Accessed 07/11/2024. *https://www.fws.gov/refuge/bon-secour*
[91] United States Fish and Wildlife Service. Grand Bay National Wildlife Refuge. Accessed 07/11/2024. *https://www.fws.gov/refuge/grand-bay*
[92] Weeks Bay National Estuarine Research Reserve. Accessed 07/11/2024. *https://www.outdooralabama.com/lands/weeks-bay-reserve*
[93] Alabama Department of Environmental Management. National Pollution Discharge Elimination System General Permit. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/ALR21CGP.pdf*

permittees to minimize the disturbance of steep slopes (slope of 15 percent or greater) (Part III A.10), consistent with element one. The *Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Construction Sites and Urban Areas* also addresses elements one and three.[94] The handbook provides guidance for site development to prevent or minimize impacts to the natural integrity of waterbodies and natural drainage systems. Specifically, the handbook contains recommendations that vegetated buffer strips be retained in their natural state or created along the banks of all water bodies. The use of buffer zones is also encouraged to reduce scour erosion and storm runoff velocities, particularly on steep slopes and along streambanks or wetlands. The voluntary *LID Handbook* addresses all three elements of the watershed protection management measure. The *LID Handbook* provides guidance on how to avoid conversion of areas that are susceptible to erosion, preservation of areas important for water quality protection such as riparian areas and the use of site development practices that protect natural drainage systems and waterbodies. The *LID Handbook* also encourages designs intended to mimic natural processes through the design of landscape features that promote stormwater infiltration, evapotranspiration, or storage, and the retention and protection of sensitive areas such as steep slopes, buffers, vegetation, and wetlands.[95]

Local municipalities and counties within the coastal nonpoint management area have also enacted rules and ordinances to protect water quality and habitat within their jurisdictions that achieve the goals of the watershed protection management measure. For example, Baldwin County's wetland protection overlay district requires development be setback a minimum 30-feet from wetlands (Section 10.4.4). Industrial developments, except docking facilities, must have at least a 50-foot buffer from wetland areas (Section 9.6.4).[96] Mobile County's Subdivision Regulations also require a buffer zone within 50 feet of perennial streams and their associated wetlands and within 25 feet of natural drainage features and their associated wetlands (Section 2 and Section 5.D.2).[97]

Alabama has demonstrated that it has enforceable policies and mechanisms in place to ensure the implementation of the watershed protection management measure. More information on these policies, as well as the ways in which the State will track management measure implementation, are summarized at the end of the existing development section.

Existing Development
Consistency with the existing development management measure requires the state to develop and implement watershed management programs to reduce runoff pollutant concentrations and volumes from existing development by:

---

[94] Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Construction Sites and Urban Areas. Accessed 07/11/2024. *https://alabamasoilandwater.gov/wp-content/uploads/2021/03/2018-Handbook-Vol-1.pdf*

[95] Alabama Department of Environmental Management and Alabama Cooperative Extension System Auburn University. Low Impact Development Handbook for the State of Alabama. Accessed 07/11/2024. *http://adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf*

[96] Baldwin County Commission. Baldwin County Zoning Ordinance. 2021. Accessed 03/21/2022. *https://baldwincountyal.gov/departments/planning-zoning/ordinances-and-regulations/docs/default-source/plannin-zoning/ordinances-and-regulations/Zoning-Ordinance(As-amended-November-21-2023*)

[97] The City of Mobile Alabama Planning Section of the Urban Development Department. Subdivision Regulations. 2008. Accessed 07/11/2024. *https://www.cityofmobile.org/pdf/SUBREGS.pdf*

1. Identifying priority local and/or regional watershed pollutant reduction opportunities
2. Developing a schedule for implementing appropriate controls
3. Limiting destruction of natural conveyance systems, and
4. Preserving, enhancing, or establishing buffers along surface waterbodies and their tributaries, where appropriate.

As with the new development management measure, NOAA and EPA's 2002 *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulation*s clarifies that coastal nonpoint programs need not include the existing development management measure in Phase I and Phase II NPDES MS4 communities. Mobile County's regulated MS4 area encompasses the cities of Mobile, Prichard, Saraland, Satsuma, Grand Bay and Bayou La Batre. In Baldwin County, the cities of Daphne, Fairhope and Spanish Fort are within designated MS4s.

Outside of these designated MS4 communities, Alabama addresses the existing development management measure through its watershed planning approach. The State is specifically targeting the five urban cluster areas (communities with a population of 2,500-50,000 people) within the coastal nonpoint management area: the cities of Bay Minette, Robertsdale, Foley, Gulf Shores and Orange Beach, all of which are located within Baldwin County. These communities encompass the most significant urban clusters within the coastal nonpoint management area, that are not already exempt from the existing development management measure due to their MS4 designation, which is consistent with NOAA and EPA's 1998 guidance that allows targeted approaches for addressing 6217(g) management measures.[98]

Through the MBNEP, Alabama is committed to partnering with these communities to develop and implement watershed management plans that identify sources of nonpoint source pollution, including from existing development, and that include schedules to implement priority pollutant reduction projects. More information on the State's watershed planning process can be found in the watershed protection section above.

Five relevant watershed management plans consistent with Alabama and MBNEP's watershed management plan requirements described in the Watershed Protection section above are complete or in development. These five plans cover nearly the entirety of the five targeted communities. Only the eastern portions of the towns of Bay Minette and Robertsdale are currently not covered by a WMP. As previously discussed in the Watershed Protection section, in areas where WMPs are not currently established, ADEM and ADCNR are committed to working alongside organizations such as the MBNEP, and others to engage the community in watershed planning. The State's watershed prioritization process initially targets five watersheds for watershed management planning that overlap with the five targeted communities; Fish River, Tensaw-Apalachee, Big Creek Lake, Bon Secour, and Fowl River.

Projects to address nonpoint source pollution from existing development that have been identified and/or implemented through the watershed planning process include paving dirt roads

[98] NOAA and EPA. 1998. *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance for Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990*. October 16, 1998. Accessed 07/11/2024. *https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217adminchanges.pdf*

to minimize sediment runoff, restoring streams and riparian areas to address runoff from upland development, limiting the destruction of natural conveyance systems, and preserving and enhancing buffers along waterways. For example, the Magnolia River WMP identified urbanization and increased impervious surfaces as issues altering the watershed's natural hydrology resulting in increased stormwater runoff and reduced infiltration. The WMP encourages users to implement principles and practices that reduce the impact of built areas and promotes the natural movement of water within a watershed. As a result of this analysis, an opportunity was identified to convert an old borrow pit into a constructed wetland to provide regional stormwater treatment and infiltration. The watershed has experienced an increase in development that has led to polluted runoff that this project would help to address. A feasibility study for the project was completed in 2021.[99,100] In another example, to combat erosion due to increased stormwater runoff as a result of rapid development of the City of Foley over the past two decades, the city is undertaking two projects to restore the headwaters of Wolf Creek and the Bon Secour River.[101,102,103] The projects entail restoring riparian wetlands, installing constructed wetlands, and stabilizing and restoring streambanks. The Wolf Bay WMP identified BMPs to establish and preserve buffers between waterbodies and roads/highways, including the construction of drainage outlets that divert water into vegetated areas that serve as natural filters and reduce storm surge into waterbodies.[104] Road paving coupled with the incorporation of stormwater management controls were also utilized to reduce water quality impacts per the Wolf Bay WMP. The Bon Secour River, Oyster Bay, Skunk Bayou WMP also calls for protecting and restoring priority areas within the watershed to reduce development related to impacts of water quality and preserve natural drainage pathways that provide important water quality benefits.[105]

Enforceable Policies and Mechanisms for New, Site and Existing Development
Alabama has demonstrated that it has enforceable policies and mechanisms in place to ensure the implementation of the new, site, and existing development management measures as well as the watershed protection management measure. The State provided a legal opinion from the Attorney General stating that the Alabama Water Pollution Control Act (Ala. Admin. Code

[99] Baldwin County Soil and Water Conservation District. 2021. Borrow Pits to Regional Detention Along Magnolia River: A Constructed Wetland Feasibility Study Report. September 2021. Accessed 07/11/2024. *https://placeslr.org/wp-content/uploads/2021/09/Borrow-Pits-to-Regional-Detention-along-Magnolia-River-Magnolia-River-final-report.pdf*
[100] Baldwin County Soil and Water Conservation District. 2021. Press Release. Magnolia River Project Assessing Constructed Wetlands Identifies Best Solution. August 2021. Accessed 07/11/2024. *https://placeslr.org/wp-content/uploads/2021/08/Press-Release-Magnolia-River-Completion-pressready.pdf*
[101] National Fish and Wildlife Foundation. Undated. Wolf Creek Headwaters Restoration - Phase I. Accessed 07/11/2024. *https://www.nfwf.org/sites/default/files/2020-11/al-wolf-creek-20.pdf*
[102] National Fish and Wildlife Foundation. Undated. Bon Secour River Headwater Restoration-Phase I. Accessed 07/11/2024. *https://www.nfwf.org/sites/default/files/2020-07/al-bon-secour-river-headwater-i-18.pdf*
[103] National Fish and Wildlife Foundation. Undated. Bon Secour River Headwater Restoration-Phase II. Accessed 07/11/2024. *https://www.nfwf.org/sites/default/files/2021-09/al-bon-secour-river-headwater-ii-20.pdf*
[104] Mobile Bay National Estuary Program. Wolf Bay Watershed Management Plan. November 2020. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/Wolf_BayWMP_web.pdf*
[105] City of Foley and Gulf Shores, Alabama. 2017. Bon Secour River, Oyster Bay, Skunk Bayou Watershed Management Plan. January 2017. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Final_Bon_Secour_WMP_January_2017.pdf*

r.22-22-1 to 22-22-14 (1997)) provides ADEM with the authority to require the implementation of management measures to prevent nonpoint source pollution to coastal waters, when needed.[106] ADEM also provided a follow up letter clarifying that the State could specifically require implementation of the 6217(g) management measures.[107] The State has described the mechanisms that link the implementing agency with the enforcing agency and is committed to using its backup authority to implement the 6217(g) management measures, when needed.[108] Alabama tracks and evaluates implementation of the voluntary elements through its CWA section 319 annual reports, watershed management plans, and the Mobile Bay National Estuarine Partnership comprehensive monitoring framework. The MBNEP also has a database specifically to track implementation of WMP projects.

C. CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL and CHEMICAL CONTROL

1998 FINDING: Alabama's program includes management measures in conformity with the 6217(g) guidance, except that the program does not provide for approved erosion and sediment control plans. The State has identified back-up enforceable policies and mechanisms for implementing these management measures, but has not yet demonstrated the ability of the authorities to ensure widespread implementation throughout the coastal nonpoint management area.

1998 CONDITION: Within two years, Alabama will include in its program a measure that ensures the development of approved erosion and sediment control plans. Within one year, Alabama will develop a strategy (in accordance with Section XIV, page 13 of the 1998 findings document) to implement these management measures throughout the coastal nonpoint management area

DECISION: Alabama has satisfied this condition.

RATIONALE: State coastal nonpoint programs need no longer include the construction site erosion and sediment control or construction site chemical control management measures because the NPDES permit application regulations for stormwater associated with construction activity apply nationwide (including the coastal nonpoint management areas of the various coastal states and territories) and have thus rendered the CZARA management measures for

[106] Letter from Bill Pryor, Attorney General, to James W. Warr, Director, Alabama Department of Environmental Management. February 15, 2002.
[107] Letter from Harry A. Lyles, Associate General Counsel, Alabama Department of Environmental Management to Dov Whitman (sic), Chief, Nonpoint Source Control Branch, U.S. Environmental Protection Agency and Josh Lott, Coastal Management Specialist, NOAA, Office of Ocean and Coastal Resource Management. June 11, 2003.
[108] Letter from J. Scott Brown, Chief of the Mobile Field Office, Alabama Department of Environmental Management to Allison Castellan, NOAA Office for Coastal Management and Don Waye, EPA Nonpoint Source Management Branch, RE: ADEM's Authority and Commitment to Prevent Non-Point Source Pollution. June 21, 2022.

these areas redundant. See NOAA and EPA's 2002 memorandum, "Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations."[109]

D. NEW AND OPERATING ONSITE DISPOSAL SYSTEMS (OSDS)

1998 FINDING: Alabama's program does not include management measures in conformity with the 6217(g) guidance, but includes enforceable policies and mechanisms to ensure implementation.

1998 CONDITION: Within three years, Alabama will modify its OSDS program to incorporate: (1) adequate separation distances between OSDS system components and groundwater that is closely hydrologically connected to surface waters, (2) the inspection of operating OSDS at a frequency sufficient to ascertain when systems are failing, and (3) provisions to protect nitrogen-limited surface waters consistent with the management measure.

DECISION: Alabama has satisfied this condition.

RATIONALE: Alabama relies on a mix of regulatory and voluntary approaches to address the conditions related to OSDS. Alabama revised its statewide OSDS rules (Ala. Admin Code r. 420-3-1) to provide adequate separation distances between the OSDS system and groundwater. The State takes a multi-pronged approach to ensure that operating OSDS are routinely inspected relying on state rules, local ordinances, and proactive outreach efforts. In addition, Alabama has demonstrated that it has provisions to protect nitrogen-limited surface waters consistent with the OSDS management measures through its performance-based permitting for OSDS established by Ala. Admin Code r. 420-3-1 and promoting the use of alternative treatment systems that reduce nitrogen loadings.

New OSDS
The purpose of the new OSDS management measure is to ensure OSDS are installed properly to protect coastal waters from pollutants discharged from OSDS. To achieve this goal, the 6217(g) guidance calls for states to:

1. Ensure that new OSDS are located, designed, installed, operated, inspected, and maintained to prevent the discharge of pollutants to the surface of the ground and to the extent practicable reduce the discharge of pollutants into groundwaters that are closely hydrologically connected to surface waters.
2. Direct placement of OSDS away from unsuitable areas
3. Establish protective setbacks from surface waters, wetlands, and floodplains for conventional as well as alternative OSDS
4. Establish protective separation distances between OSDS system components and groundwater which is closely hydrologically connected to surface waters, and
5. Where conditions indicate that nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from groundwater, require the installation of OSDS that reduce total nitrogen loadings by 50 percent.

[109] NOAA and EPA. 2002. "Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations." Accessed 07/11/2024.
https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

As part of the 1998 findings, NOAA and EPA found that Alabama satisfied the first three elements of the new OSDS management measure.[110] Since then, Alabama has revised its OSDS rules to ensure adequate separation distances between OSDS and groundwater (element 4) and demonstrated it has processes in place to require the installation of OSDS that reduce total nitrogen loadings by 50 percent where conditions indicate that nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from groundwater (element 5). A discussion of how Alabama satisfies element 4 follows. For a discussion on how the State has satisfied element 5, see the "Protection of Nitrogen-limited Surface Waters" subsection at the end of this section.

Effective March 2017, the Alabama Department of Public Health (ADPH) adopted the Rules of State Board of Health Bureau of Environmental Services, Division of Community Environmental Protection, Chapter 420-3-1, Onsite Sewage Treatment and Disposal, which establishes requirements for vertical separation distances to ensure adequate protection is provided between the OSDS and groundwater closely hydrologically connected to surface water. The performance-based regulations were developed to address a number of site characteristics (e.g., soil analysis, percolation test, slope, etc.), as well as the level of treatment (e.g., conventional tank, advanced treatment system, etc.) when determining vertical separation distances. In particular, section 420.3.1.66, Soil Depth and Vertical Separation Criteria, and Table 19 (*Minimum Vertical Separation Requirements*) in Appendix A of the regulations, establish four general separation distances from average seasonal high extended saturation depending on site conditions and system design in the coastal area:

- Soils that have a percolation rate of less than five minutes per inch require a separation distance of 36 inches
- Soils with estimated permeability between 5-30 minutes per inch requires a 24-inch separation distance
- Soils with estimated permeability between 31-240 minutes per inch requires an 18-inch separation distance
- If the effluent is treated to secondary standards (e.g., aerobic treatment, fixed media membrane) the separation can be reduced to 12 inches regardless of permeability.

These vertical separation distance standards show that Alabama has established protective separation distances between OSDS and groundwater that is closely hydrologically connected to surface waters per the 6217(g) management measure for new OSDS.

Operating OSDS
For operating OSDS, the 6217(g) guidance directs states to:

1. Establish and implement policies and systems to ensure that existing OSDS are operated and maintained to prevent the discharge of pollutants
2. Inspect OSDS at a frequency to ascertain whether OSDS are failing, and
3. Where conditions indicate that nitrogen-limited surface waters may be adversely affected by groundwater nitrogen loadings from OSDS and where nitrogen loadings from OSDS are delivered to groundwater that is closely hydrologically connected to

[110] NOAA and EPA. 1998. Alabama Coastal Nonpoint Program Findings and Conditions. June 30, 1998. Accessed 07/11/2024. *https://coast.noaa.gov/data/czm/pollutioncontrol/media/findal.txt*

surface water, consider replacing or upgrading OSDS to treat effluent so that total nitrogen loadings are reduced by 50 percent.

NOAA and EPA previously found that Alabama has satisfied the first element as part of the 1998 findings for the State's coastal nonpoint program.[111] Alabama has since demonstrated it has also addressed the second and third elements of the operating OSDS management. How the State is addressing the inspection element is discussed in this subsection and how Alabama considers the replacement or upgrade of existing OSDS to reduce nitrogen loadings where conditions indicate that nitrogen-limited surface waters may be adversely affected by groundwater nitrogen loadings from OSDS is discussed in the "Protection of Nitrogen-limited Surface Waters" subsection below.

Alabama estimates that there are a slightly more than 68,000 OSDS within the coastal nonpoint management area as of May 2022. The State has developed a multi-pronged strategy to ensure these operating OSDS are inspected on a routine basis consistent with the 6217(g) guidance. In coastal Alabama, inspections of operating OSDS occur through multiple channels, including:

- State requirements for routine inspections for large-flow and alternative treatment systems
- Instances where repairs to OSDS occur
- Home remodeling (under local requirements) and
- Voluntarily, as a result of proactive outreach programs.

Each of these categories are discussed below.

First, Alabama requires that all persons engaged in the manufacture, installation, or servicing of OSDS be trained and licensed (Code of Ala. 1975, Sections 34-21A-1 through 34-21A-26). Training requirements cover installation, operation, pumping, and inspection of OSDS to protect the State's surface and groundwater. The Alabama Onsite Wastewater Board (AOWB) holds the authority to examine, license, and regulate OSDS professionals. To obtain a license, individuals must pass a skills-based test and then complete continuing education coursework each year to maintain their license (AOWB Rule 628-X-3.07).

All certified and licensed pumpers must inspect septic tanks at the time of pump-outs. According to AOWB's OSDS inspection and pump-out report, the pumper determines if water is at the proper level in the tank, checks for wet spots on the ground near the OSDS, determines if the tank lid, baffle wall, and outlet tee are in good condition, and checks for the presence of an effluent filter.[112] In accordance with Ala. Admin. Code r. 420-3-6-.23(1)(a)1, pumpers are required to keep adequate records of all pump-outs and inspections performed for submission to the local health department. In Baldwin and Mobile counties, these records are submitted monthly to the local health department and recorded into each county's OSDS database. Based on county records, between 2015 and 2021, an average of 4,160 operating OSDS were pumped and inspected within the coastal nonpoint management area each year. Alabama estimates that based on current pump-out rates, more than 62,000 pump-out based inspections of operating

[111] NOAA and EPA. 1998. Alabama Coastal Nonpoint Program Findings and Conditions. June 30, 1998. Accessed 07/11/2024. *https://coast.noaa.gov/data/czm/pollutioncontrol/media/findal.txt*

[112] Alabama Onsite Wastewater Board. Undated. Onsite Wastewater System Inspection Report. Accessed 07/11/2024. *https://aowb.alabama.gov/PDF/forms/SYSTEM_INSPECTION_REPORT.pdf*

OSDS will occur over the next 15 years; some percentage of these inspections are likely to be repeats for the same systems.

In addition to inspections that occur during routine system pump-outs, State law requires all large-flow OSDS (i.e., decentralized wastewater systems that discharge greater than 1,800 gallons per day) have a performance permit that must be renewed every five years (Ala. Admin. Code r. 420-3-1-.05(2) and 420-3-1-.12(2)(b)). As part of the permit, large-flow systems must provide effluent samples annually or quarterly depending on the individual permit. Owners of large-flow systems must also allow ADPH or the local health department to access their property for routine inspections and to sample the effluent and monitoring wells (Ala. Admin. Code 420-3-1-.22(5)(a)). Alabama estimates that 225 large-flow systems will be subjected to these inspection regulations over the next 15 years.

Ala. Admin. Code r. 420-3-1-.06(5) also requires proprietary systems, such as alternative, engineered or advanced treatment systems, to have a maintenance contract in place for the first two years after installation. The maintenance contract ensures the systems are inspected and properly maintained every six months. Although inspections are not required after the first two years, the providers of these types of systems must continue to offer maintenance contracts to owners of these types of systems (Ala. Admin. Code r. 420-3-1-.06(5)). Based on current inspection records for alternative, engineered and advanced treatment systems, Alabama estimates that roughly 140 of these types of systems will be inspected each year within the coastal nonpoint management area through these maintenance contracts. With the growth in numbers of these systems, Alabama estimates that more than 600 of them will be inspected over the next 15 years.

All new OSDS installed after 2017 in Alabama are also required to include effluent filters (Ala. Admin. Code r. 420-3-1-0.23(1)(h)). Effluent filters reduce pollution by retaining small particles that can potentially clog the field lines and soil-based infiltration systems (leach fields). They also provide feedback to the homeowner when the tank needs to be inspected or pumped in instances where the effluent filter is clogged and the system backs up into the residence or drains abnormally slowly. Although not required for older homes, ADPH also recommends installing an effluent filter when a system is pumped if one is not already installed.[113]

Alabama law also requires that OSDS be inspected and pumped at the time of repair (Ala. Admin. Code r. 420-3-1-.47). “Repaired systems are subject to the same inspection requirements and installation documentation as new systems” (Ala. Admin. Code r. 420-3-1-.47(f)). Based on inspection records for Baldwin and Mobile counties, Alabama estimates that over 520 repair inspections will occur per year within the coastal nonpoint management area, inspecting 7,920 systems over the next 15 years.

In addition, using the authority under Ala. Admin. Code r. 420-3-1-.48 that allows the local health department to inspect existing OSDS, when a home is remodeled or a mobile home is changed, Mobile County require OSDS verification inspections before Alabama Power restores

[113] Alabama Department of Public Health. 2021. Septic Tank Maintenance. Accessed 07/11/2024. *https://www.alabamapublichealth.gov/onsite/maintenance.html*

power to a dwelling. The verification inspections ensure the system is functioning properly and is appropriately sized for the new/remodeled structure.[114,115] As of 2018, Mobile County Health Department staff fill out a Verification of Existing OSDS form to record that the system is properly functioning, well maintained, not damaged, and not being used by multiple dwellings.[116] The State estimates that, based on past records, about 220 verification inspections are expected to occur each year within the coastal nonpoint management area.

Beyond required inspections, Alabama also has a proactive outreach program that continues to encourage routine pump-outs and inspections for operating OSDS. The State's OSDS rules state that "A typical residential OSS [onsite sewage system] should be pumped every 3 years" (Ala. Admin. Code r. 420-3-1-.02(3)). Outreach efforts have included holding local OSDS operation and maintenance workshops in Mobile and Baldwin counties to educate homeowners about proper septic tank operation, maintenance, and options for alternative treatment systems. Between 2015 and 2019, the State and its partners conducted 48 public workshops, reaching over 1,200 local residents within the coastal nonpoint management area. Workshop attendees received packets that included personal OSDS maintenance and pump-out tracking sheets so residents could know when they were due for a pump-out. As an added incentive, attendees also received a voucher for a free septic tank pump-out and inspection. The workshops were also recorded and are now available online for the public to take the training by themselves at any time.[117] In addition to workshops, other outreach efforts have included radio spots, placards at gas pumps, and billboards to encourage routine pump-outs and inspections for OSDS. The State estimates that an additional 4,600 systems are inspected each year within the coastal nonpoint management area through voluntary approaches and has committed to maintaining this pace of voluntary inspections.

Baldwin and Mobile counties have developed OSDS inspection databases to track inspections and pump-outs of operating OSDS. The databases are regularly updated as part of staff level requirements and, as noted previously, all certified OSDS inspectors and pumpers must record their information in the databases monthly.[118,119] The local health departments track the number of inspections in their annual reports and submit their inspection information to the ACNPCP annually. ACNPCP is committed to tracking progress of OSDS inspection goals over a 15-year

[114] Email from Alabama Coastal Nonpoint Pollution Program and Mobile County Health Department. "Mobile County Health Department OSDS description of verification inspection-Dec2021". December 3, 2021. Copy available upon request.
[115] Email correspondence from Alabama Coastal Nonpoint Pollution Program and Baldwin County (Camilla English, Alabama Department of Public Health, Environmental Supervisor for Baldwin and Escambia Counties). October 4, 2022. Copy available upon request.
[116] Mobile County Health Department. Environmental Health Onsite Services. Verification of Existing OSDS Form. Copy available upon request.
[117] Alabama Coastal Foundation. Coastal Alabama Onsite Sewage and Disposal System Workshops. updated 2020. Accessed 07/11/2024. *https://www.joinacf.org/osds-workshops*
[118] Email from Alabama Coastal Nonpoint Pollution Program and Mobile County Health Department. "Mobile County Health Department OSDS description of verification inspection-Dec2021". December 3, 2021. Copy available upon request.
[119] Email correspondence from Alabama Coastal Nonpoint Pollution Program and Baldwin County (Camilla English, Alabama Department of Public Health, Environmental Supervisor for Baldwin and Escambia Counties). October 4, 2022. Copy available upon request.

implementation period and working with the two local health departments as needed, and at least every five years, to ensure their overall goal of inspecting at least 85 percent of the systems within the coastal nonpoint program over the next 15 years is met. Together they will determine what percentage of systems have been inspected within that period and determine if protocol changes are needed to achieve those goals. The agencies will also discuss and document any needed updates or conditions that caused a reduction in inspections in that year (e.g., pandemic, hook-ups to city sewer, etc.).

To support its voluntary-based approaches to inspecting operating OSDS, Alabama provided a legal opinion from the Attorney General stating that the Alabama Water Pollution Control Act (Ala. Admin. Code r. 22-22-1 to 22-22-14 (1997)) provides ADEM with the authority to require the implementation of the management measures, including the operating OSDS management measure, to prevent nonpoint source pollution to coastal waters, when needed.[120] ADEM also provided a follow up letter clarifying that the State could specifically require implementation of the 6217(g) management measures.[121] In addition, ADEM provided a letter stating that the State is committed to using its back-up authority, when needed.[122] The State has also described how ADEM, the enforcing agency, has interagency memorandums of understanding in place with Mobile County and Baldwin County health departments, that describe how the agencies work together to ensure operating OSDS are not causing nonpoint source pollution.[123]

Protection of Nitrogen-Limited Surface Waters
Alabama's 2017 OSDS rules provide for "performance-based permitting" which allows the health department to set performance-based limits on OSDS in situations where potential water quality degradation may occur, such as nitrogen-sensitive waters (Ala. Admin. Code r. 420-3-1-.05(2)). This performance-based permitting approach allows health officials to select and size OSDS technologies appropriate for the estimated flow and strength of the wastewater based on site-specific conditions (Ala. Admin. Code r. 420-3-1-.21 to 420-3-1-.26). Although performance-based permitting is required for large-flow systems (1800 or more gallons per day), local health departments can extend this permitting requirement to any other system where ADPH, in consultation with the local health department, concludes the standard "Approval for Use" permit alone is not adequate to protect the public's health or the environment (Ala.

[120] Letter from Bill Pryor, Attorney General, State of Alabama, to James W. Warr, Director, Alabama Department of Environmental Management. Title: Environmental Management Department - Coastal Area Management Program - Pollution. The Alabama Department of Environmental Management has by statute, been granted enforcement authority sufficient to prevent nonpoint pollution. Additionally, authority exists, and has been previously utilized through promulgation of regulations to require the implementation of appropriate nonpoint source management measures. February 15, 2002.
[121] Letter from Harry A. Lyles, Associate General Counsel, Alabama Department of Environmental Management to Dov Whitman (sic), Chief, Nonpoint Source Control Branch, U.S. Environmental Protection Agency and Josh Lott, Coastal Management Specialist, NOAA, Office of Ocean and Coastal Resource Management. RE: Legal Opinion - Adequacy of the authority of the Alabama Department of Environmental Management. June 11, 2003.
[122] Letter from J. Scott Brown, Chief of the Mobile Field Office, Coastal Zone Management Program, Alabama Department of Environmental Management (ADEM) to Allison Castellan, Office for Coastal Management, NOAA and Don Waye, Nonpoint Source Management Branch, EPA. RE: ADEM's Authority and Commitment to Prevent Non-Point Source Pollution. June 21, 2022.
[123] Alabama Department of Environmental Management Nonpoint Source Unit. Alabama Coastal Nonpoint Pollution Control Program. Coastal Alabama Onsite Sewage and Disposal System Technical Update and Category Summary Project. September 2022. Copy available upon request.

Admin. Code r. 420-3-1-.21(1)). Where conditions indicate that nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from groundwater, ADPH uses its performance-based permitting authority to require the installation of alternative, engineered or advanced treatment OSDS that reduce total nitrogen loadings by 50 percent to groundwater that is closely hydrologically connected to surface water. The Alabama Onsite Wastewater Training Center provides training to certified OSDS installers and inspectors to ensure the correct system is selected and installed for the site conditions, including near nitrogen-sensitive waters.

Alabama continues to promote the use of denitrifying OSDS in nitrogen sensitive waters, including during system replacements and upgrades, as evidenced by its regulatory support for alternative systems and its active training programs for OSDS installers that ensure practitioners use the correct system for the site conditions. This outreach is consistent with the element of the operating OSDS management measure to consider replacing or upgrading OSDS with denitrifying systems where conditions warrant.

E. ROADS, HIGHWAYS, AND BRIDGES

1998 FINDING: Alabama's program includes management measures in conformity with the 6217(g) guidance and enforceable policies and mechanisms to ensure implementation, except that it does not include management measures and enforceable policies and mechanisms for operation and maintenance and for runoff systems.

1998 CONDITION: Within two years, Alabama will include in its program management measures in conformity with the 6217(g) guidance and enforceable policies and mechanisms for operation and maintenance and for runoff systems.

DECISION: Alabama has satisfied this condition.

RATIONALE: The operation and maintenance management measure specifies that states incorporate pollution prevention procedures into the operation and maintenance of roads, highways, and bridges to reduce pollutant loadings to surface waters. The runoff systems management measure calls on states to develop and implement runoff management systems for existing roads, highways, and bridges to reduce runoff pollutant concentrations and volumes entering surface waters by:

1. Identifying priority and watershed pollutant reduction opportunities; and
2. Establishing schedules for implementing appropriate controls.

Alabama meets the roads, highways and bridges management measures for operation and maintenance and runoff systems through its Alabama Department of Transportation (ALDOT) operation and maintenance programs and guidance documents, and watershed planning efforts. The State has also provided a legal opinion and supporting documents demonstrating it has enforceable policies and mechanisms to ensure implementation of these management measures throughout the coastal nonpoint management area, when needed.

In December 2002, NOAA and EPA issued a policy clarification stating that state coastal nonpoint programs are no longer required to address the road, highway and bridge operation

and maintenance and runoff system management measures within designated MS4s on the basis that these management measures are implemented by municipalities under NPDES stormwater permits.[124] Once a source is covered by a NPDES permit, it is excluded from coastal nonpoint program requirements.[125] Therefore, by implementing the Phase I and II NPDES stormwater programs, Alabama has met the conditions for the road, highway and bridge operation and maintenance and runoff system measures within its Phase I and II communities.[126] Mobile County's regulated MS4 area encompasses the City of Mobile, Prichard, Saraland, Satsuma, Grand Bay and Bayou La Batre. In Baldwin County, the cities of Daphne, Fairhope and Spanish Fort are within designated MS4s.

Operation and Maintenance
The road, highway and bridges operation and maintenance management measure calls on states to incorporate pollution prevention procedures into the operation and maintenance of roads, highways and bridges to reduce pollutant loadings to surface waters. Outside of designated MS4s, Alabama meets the operation and maintenance management measure through ALDOT's road maintenance program and guidance documents, county road maintenance programs, and watershed management planning process.

For roads under ALDOT's care, ALDOT developed a guidance manual to ensure that all data collected to assess and prioritize road maintenance needs are collected in a standardized way.[127] Under the guidelines in the manual activities such as street sweeping, erosion repair, litter removal, and drain, ditch and culvert repair and clean-out are addressed and these activities are consistent with the 6217(g) guidance. ALDOT's Maintenance Manual also provides guidance on routine maintenance activities needed for state roads.[128] The manual includes activities for litter removal, drainage structure cleanout and maintenance, street sweeping, and roadside erosion repair, demonstrating that the State has incorporated pollution prevention procedures into its routine road maintenance activities. Both Mobile and Baldwin Counties have Storm Water Management Program Plans that address control of nonpoint source pollution related to road maintenance and operation.[120,121] For example, Baldwin County inspects all roadways and associated stormwater conveyance every two years. The inspections results are used to prioritize roads and stormwater structures for repair and maintenance.

---

[124] NOAA and EPA. "Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations." 2002. Accessed 07/11/2024.
https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf
[125] NOAA and EPA. *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance.* January 1993 (Appendix B: National Pollutant Discharge Elimination System). Accessed 07/11/2024.
https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217progguidance.pdf
[126] NOAA and EPA. "Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations." 2002. Accessed 07/11/2024.
https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf
[127] ALDOT. 2021. *Level of Service Condition Assessment Data Collection Manual*. January 2021. Accessed 07/11/2024.
https://www.dot.state.al.us/publications/Maintenance/pdf/ManagementTraining/ConditionAsessmentDataCollectionManual.pdf
[128] ALDOT. 1995. Alabama Department of Transportation Maintenance Manual. Accessed 07/11/2024.
https://www.dot.state.al.us/publications/Maintenance/pdf/MaintenanceManual.pdf

Department of Public Works staff in Mobile County sweep all public paved streets at least once a year across the entire city and more than once a year for hot spots. Public Works staff also track which roads are swept and the quantity of sediment removed.[129,130] Public Works staff are also responsible for maintaining roadside, right-of-way, and median vegetation along public roads including clearing stormwater inlets and herbicide application to control vegetation. Catch basins are inspected and cleaned of liter and debris annually following an established schedule based on zones and when needed based on service request orders.[131] The Baldwin County Highway Department is responsible for the operation and maintenance of over 1,600 miles of dirt, gravel and paved local roads including the grading of dirt and gravel roads, pothole repairs, erosion repair, drainage structure clean out, and removal of litter and vegetation.[132,133,134]

Alabama's watershed planning process, described in more detail in the watershed protection section, also provides a mechanism for the State to identify and carry out road, highway and bridge maintenance activities, including for local roads. For example, the Wolf Creek WMP identifies priority maintenance needs for unpaved roads, including contour grading into a vegetated swale and placing stone on the road surface to help stabilize the soil.[135] Mobile County successfully leveraged the WMP process to secure RESTORE Act funding from for a dirt road paving project targeting sediment reduction in environmentally sensitive areas.[136] In 2022, the Baldwin County Environmental Advisory Committee, appointed by the Baldwin County Commission, released the third publication of *The 25 Most Environmentally Damaging Dirt Roads,* with previous releases in 2010 and 1998.[137] The report directly cites road segments identified in existing WMPs and denotes opportunities to include road segments in future WMPs. Notably, the original report published in 1998 referenced a total of 600 miles of dirt roads in the county. As of the 2022 publication, only 170 miles of dirt road remain, corresponding to more than a 70 percent reduction over the 24-year period.

Runoff Systems

[129] Mobile County, Alabama. (undated). Engineering and Public Works Department. (website). Accessed 07/11/2024. *https://www.mobilecountyal.gov/government/departments/public-works/*
[130] Baldwin County, Alabama. 2021. Stormwater Management Program Plan. Accessed 07/11/2024. *https://baldwincountyal.gov/docs/default-source/plannin-zoning/stormwater-information/baldwin-county-2021-2026-swmpp---draft-online-document.pdf?sfvrsn=9e00b53c_3*
[131] City of Mobile. 2023. Stormwater Management Program Plan. Accessed 07/11/2024. *https://www.mobilecountyal.gov/uploads/2023-03-14DRAFTMobileCountySWMPPlan.pdf*
[132] Baldwin County, Alabama. (undated). Baldwin County Highway Department. (website). Accessed 07/11/2024. *https://baldwincountyal.gov/departments/highway*
[133] ALDOT. 1995. Alabama Department of Transportation Maintenance Manual. Accessed 07/11/2024. *https://www.dot.state.al.us/publications/Maintenance/pdf/MaintenanceManual.pdf*
[134] Baldwin County, Alabama. 2021. Stormwater Management Program Plan. Accessed 07/11/2024. *https://baldwincountyal.gov/docs/default-source/plannin-zoning/stormwater-information/baldwin-county-2021-2026-swmpp---draft-online-document.pdf?sfvrsn=9e00b53c_3*
[135] Mobile Bay National Estuary Partnership. 2005. Wolf Bay Watershed Management Plan. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Wolf_BayWMP_web.pdf*
[136] Alabama Coastal Restoration. 2023. Accessed 07/11/2024. *http://restorealabama.org/Portals/0/Documents/AGCRC%20Public%20Meeting%20Final%203.7.18.pdf?ver=2018-03-08-193057-227*
[137] Mobile Bay National Estuary Partnership. 2005. Wolf Bay Watershed Management Plan. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Wolf_BayWMP_web.pdf*

To address the runoff systems management measure for roads, highways and bridges, states need to develop and implement runoff management systems for existing roads, highways and bridges to reduce runoff pollutant concentrations and volumes entering surface waters that:

1. Identifies priority and watershed pollutant reduction opportunities; and
2. Establishes schedules for implementing appropriate controls.

Outside of designated MS4s, Alabama addresses the runoff systems management measure through its watershed planning process and ALDOT's Statewide Transportation Improvement Program (STIP). The watershed planning process is described in more detail in the watershed protection section above. Through the development of watershed plans, Alabama identifies priority pollutant reduction opportunities for existing roadways and establishes schedules for implementing priority projects. For example, both the Wolf Bay and West Fowl River WMPs identified improvements for unpaved roads, such as paving, contour grading, and the addition of grade breaks and drainage outlets to reduce erosive runoff from road surfaces.[138,139] The West Fowl River WMP also identified other priority nonpoint source problems to be addressed where roadways cross streams. Implementing these priority road runoff improvements is underway. For example, in the Wolf Bay watershed, and throughout the county, Baldwin County has been targeting unpaved roads for paving and other improvements to address polluted runoff.[140]

In addition to its watershed planning efforts, Alabama undertakes long-range planning to identify priority improvements and maintenance needs for the State's roadways and other transportation infrastructure through the STIP program. The State established Rural Planning Organizations (RPOs) to help coordinate STIP planning between ALDOT and the local governments they represent. While not all roadway improvements are specifically designed to address nonpoint source pollution concerns, the STIP program does provide the State with another mechanism for identifying, prioritizing and funding projects to reduce polluted runoff from roads, highways and bridges. For example, the FY 2023 RPO report for projects selected for implementation in Baldwin County includes projects that will improve runoff management systems along roadways such as repairing damaged and washed-out cross drains, repairing slope failure and roadside erosion, and improving roadside drainage ditches.[141]

Enforceable Policies and Mechanisms for Operation and Maintenance and Runoff Systems
Alabama has demonstrated that it has enforceable policies and mechanisms in place to ensure the implementation of the roads, highways and bridges management measures for operation and maintenance and runoff systems. The State provided a legal opinion from the Attorney General

[138] Mobile Bay National Estuary Partnership. 2005. Wolf Bay Watershed Management Plan. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Wolf_BayWMP_web.pdf*
[139] Mobile Bay National Estuarine Program. 2019. West Fowl River Watershed Management Plan. June 11, 2019. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/West-Fowl-River-Watershed-Management-Plan-FINAL_06142019.pdf*
[140] Baldwin County Environmental Advisory Committee. 2022. The 25 Most Environmentally Damaging Dirt Roads. Accessed 07/11/2024. *https://baldwincountyal.gov/docs/default-source/plannin-zoning/environmental-advisory-committee/2023-the-25-most-environmentally-damaging-dirt-roads-in-baldwin-county-3rd-publication.pdf?sfvrsn=fe1ece67_1*
[141] Northwest Alabama Council of Local Governments (NACOLG). 2022. *Rural Planning Organization (RPO) FY 2023 Work Program*. May 2022. Accessed 07/11/2024. *https://www.nacolg.org/news/northwest-alabama-rural-planning-organization-rpo-fy-2022-work-program*

stating that the Alabama Water Pollution Control Act (Ala. Code §22-22-1 to §22-22-14 (1997)) provides ADEM with the authority to require the implementation of management measures to prevent nonpoint source pollution to coastal waters, when needed.[142] ADEM also provided a follow up letter clarifying that the State could specifically require implementation of the 6217(g) management measures.[143] The State has described the mechanisms that link the implementing agency with the enforcing agency and is committed to using its backup authority to implement the 6217(g) management measures, when needed.[144] Alabama tracks and evaluates implementation of the voluntary elements through its CWA section 319 annual reports, watershed management plans, and the Mobile Bay National Estuarine Partnership comprehensive monitoring framework. The MBNEP also has a database specifically to track implementation of WMP projects.

V. MARINAS AND RECREATIONAL BOATING

1998 FINDING: Subject to the conditions in the boundary section, Alabama's program includes management measures in conformity with the 6217(g) guidance except the State's program does not include management measures in conformity with the boat operation management measure. Alabama's program includes enforceable policies and mechanisms to ensure implementation of the management measures within the existing coastal management area.

1998 CONDITION: Within two years, Alabama will include in its program management measures in conformity with the boat operation management measure. Within two years, the State will also develop new authorities or modify existing authorities to ensure implementation of all the management measures throughout the coastal nonpoint management area.

DECISION: Alabama has satisfied this condition.

RATIONALE: Alabama meets the conditions for the boat operation management measure for recreational boating through a mix of regulatory and voluntary approaches, including the Alabama Boating Safety Enhancement Act of 2001, the Alabama Waterways Guide, and its watershed management planning efforts. The State has also provided a legal opinion and supporting documents demonstrating it has enforceable policies and mechanisms to ensure implementation of these management measures throughout the coastal nonpoint management area, when needed.

[142] Letter from Bill Pryor, Attorney General, to James W. Warr, Director, Alabama Department of Environmental Management. February 15, 2002.
[143] Letter from Harry A. Lyles, Associate General Counsel, Alabama Department of Environmental Management to Dov Whitman (sic), Chief, Nonpoint Source Control Branch, U.S. Environmental Protection Agency and Josh Loss, Coastal Management Specialist, NOAA, Office of Ocean and Coastal Resource Management. June 11, 2003.
[144] Letter from J. Scott Brown, Chief of the Mobile Field Office, Alabama Department of Environmental Management to Allison Castellan, NOAA Office for Coastal Management and Don Waye, EPA Nonpoint Source Management Branch, RE: ADEM's Authority and Commitment to Prevent Non-Point Source Pollution. June 21, 2022.

The boat operation management measure calls on states to restrict boating activities where necessary to decrease turbidity and physical destruction of shallow water habitat. Alabama boaters must pass an exam to receive a boating license, pursuant to the Alabama Boating Safety Enhancement Act of 2001 (Ala. Code §33-5-52). Although the focus of the law and the exam is public safety, environmental best practices consistent with the 6217(g) management measure are included in the online study guide.[145] For example, the guide discusses the importance of reducing the throttle to "no wake" speed when close to a shoreline or in small rivers to help prevent erosion and states not to operate boats or personal watercraft in shallow water where the prop or pump intake can stir up bottom sediment.

In addition to state-mandated "no wake zones" for public safety, local governments can establish mandatory no wake zones to protect environmentally sensitive areas from damaging boat wakes that can cause shoreline erosion and increased water turbidity (Ala. Code §33-5-31). Some communities, such as Orange Beach, have used the State's watershed management planning process to identify priority areas where no wake zones are needed to prevent further shoreline erosion. The city implemented no wake/no motor zones around the islands in Perdido Bay to protect the islands from further shoreline erosion.[146] The lower Perdido Islands have been the focus of efforts to map submerged aquatic vegetation beds, install signage at area boat ramps to increase awareness of sensitive habitats, and install in-water signage to designate no-motor, no-wake, and other restricted areas to protect these sensitive habitats. In addition, a boating app has been developed and is being implemented to alert boaters to no-wake, no-motor, and sensitive habitats. This area is highly trafficked by recreational boaters and tourists and the above-mentioned efforts have increased awareness of sensitive habitats among these users.

Enforceable Policies and Mechanisms for Boat Operation
Alabama has demonstrated that it has enforceable policies and mechanisms in place to ensure the implementation of the boat operation management measure. The State provided a legal opinion from the Attorney General stating that the Alabama Water Pollution Control Act (Ala. Code §22-22-1 to §22-22-14 (1997)) provides ADEM with the authority to require the implementation of management measures to prevent nonpoint source pollution to coastal waters, when needed.[147] ADEM also provided a follow up letter clarifying that the State could specifically require implementation of the 6217(g) management measures.[148] The State has described the mechanisms that link the implementing agency with the enforcing agency and is committed to using its backup authority to implement the 6217(g) management measures, when

[145] Boat-Ed. Study Guide for Boating Education. Not Dated. Accessed 07/11/2024. *https://www.boat-ed.com/indiana/studyGuide/Responsibility-to-Environment-Protect-and-Preserve/10101602_35478/* and *https://www.boat-ed.com/alabama/studyGuide/Environmental-Considerations-for-a-PWC/10100202_26124/*
[146] Mobile Bay National Estuarine Program. 2022. Gulf Frontal Complex Watershed Management Plan. January 2022. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/uploads/main/FINAL_-Gulf-Frontal-WMP.pdf*
[147] Letter from Bill Pryor, Attorney General, to James W. Warr, Director, Alabama Department of Environmental Management. February 15, 2002.
[148] Letter from Harry A. Lyles, Associate General Counsel, Alabama Department of Environmental Management to Dov Whitman (sic), Chief, Nonpoint Source Control Branch, U.S. Environmental Protection Agency and Josh Loss, Coastal Management Specialist, NOAA, Office of Ocean and Coastal Resource Management. June 11, 2003.

needed.[149] Alabama tracks and evaluates implementation of the voluntary elements through its CWA section 319 annual reports, watershed management plans, and the Mobile Bay National Estuarine Partnership comprehensive monitoring framework. The MBNEP also has a database specifically to track implementation of WMP projects.

VI. HYDROMODIFICATION

1998 FINDING: Subject to the conditions in the boundary section, Alabama's program includes management measures in conformity with the 6217(g) guidance, and includes enforceable policies and mechanisms to ensure implementation of the first two elements of both channelization/channel modification management measures, and the second element of the eroding streambanks and shorelines management measures. However, the program does not include: (1) a process to improve surface water quality and restore instream and riparian habitat through the operation and maintenance of existing modified channels; (2) a process to address existing nonpoint source pollution problems caused by eroding streambanks and shorelines; and (3) a process to protect shoreline features with the potential to reduce nonpoint pollution, and protect shoreline features against erosion due to uses either of the shorelands or adjacent surface waters.

1998 CONDITION: Within three years, Alabama will develop a process to identify and implement opportunities to: (1) improve surface water quality and restore instream and riparian habitat through the operation and maintenance of existing modified channels; (2) address existing nonpoint pollution problems caused by eroding streambanks and shorelines; and (3) protect shoreline features with the potential to reduce nonpoint pollution, and protect shoreline features against erosion due to uses either of the shorelands or adjacent surface waters.

DECISION: Alabama has satisfied these conditions.

RATIONALE: Alabama meets the hydromodification management measures through a combination of voluntary approaches through the watershed planning process and regulatory approaches including buffer requirements in NPDES permits and local ordinances.

Channelization and Channel Modification
The 6217(g) guidance includes two management measures to address channelization and channel modification activities: the management measure for the physical and chemical characteristics for surface waters and the management measure for riparian habitat restoration. The third element of the channelization and channel modification management measures, for which Alabama was conditioned, calls for states to develop operation and maintenance programs for existing modified channels to identify and implement opportunities to improve physical and chemical characteristics of surface waters and to restore instream and riparian habitats in those channels.

[149] Letter from J. Scott Brown, Chief of the Mobile Field Office, Alabama Department of Environmental Management to Allison Castellan, NOAA Office for Coastal Management and Don Waye, EPA Nonpoint Source Management Branch, RE: ADEM's Authority and Commitment to Prevent Non-Point Source Pollution. June 21, 2022.

Alabama addresses the condition for an operation and maintenance program for existing modified channels through a combination of shoreline mapping of coastal management areas which identifies existing modified channels, ADEM's emphasis on riparian area protection and restoration in WMPs, and a standardized monitoring and assessment mechanism that can be used to both identify opportunities to improve surface water or riparian habitat and evaluate implementation opportunities. Each of these actions are described in more detail below.

The ADCNR partnered with the Geographic Survey of Alabama to conduct a comprehensive shoreline mapping effort for Baldwin and Mobile counties.[150] The purpose of the comprehensive shoreline mapping project was to compile an inventory of geographic information system data to classify shore protections (i.e., natural, concrete bulkhead, etc.) and shoreline types (i.e., artificial, vegetated, etc.) and quantify shoreline change where applicable. Prior to this study, a baseline assessment of shorelines did not exist. Study areas for the mapping project were broken into three phases that were completed between 2009 and 2012; in total more than 800 miles of shoreline were mapped across the three phases. An outcome of the comprehensive shoreline mapping project was the development of inventory maps for each area of study that summarize the length of shore protection and shoreline type. For example, mapping of the Dog River System identified that 21 percent (27.4 miles) of the total for shore protection was comprised of bulkheads (i.e., steel, wood, and riprap). The development of this shoreline data set for coastal watersheds is useful in the development of WMPs for identifying and prioritizing water quality or riparian habitat restoration of existing modified channels. For example, the Gulf Frontal Complex WMP's Shoreline Assessment (Section 4.8) uses shoreline protection and shoreline type data to identify shoreline that is hardened (24.4 percent) and determine the Environmental Sensitivity Index (ESI) to rank shorelines from low to high sensitivity. ESI analysis indicated 62 percent of the shoreline was highly sensitive with an ESI of 5 or higher. This analysis led to the identification of operation and management actions such as the removal and replacement of 5,000 to 60,000 feet of failing bulkheads and the implementation of living shorelines to stabilize eroded shoreline between the bulkheads. The Dog River WMP and the Wolf Bay WMP are other examples that incorporated data from the comprehensive shoreline mapping project to identify actions to improve the management of modified channels.[151,152]

ADEM's Hydromodification Management Measure Technical Report acknowledges riparian area protection and restoration as an important NPS pollution management measure in

[150] Comprehensive Shoreline Mapping, Baldwin and Mobile counties, Alabama: Phase 1-3. 2009-2021. Accessed 07/11/2024. Phase 1: *https://www.mobilebaynep.com/assets/pdf/Shoreline-Mapping-Baldwin-Mobile-Counties-AL-PhaseI-JonesTidwell-Darby2009.pdf*
Phase 2: *https://www.mobilebaynep.com/assets/pdf/Shoreline_Mapping-Baldwin_amp_Mobile_Counties2C_AL-Phase2_JonesampTidwell2011.pdf*
Phase 3: *https://www.mobilebaynep.com/assets/pdf/Shoreline_Mapping-Baldwin_amp_Mobile_Counties2C_AL-Phase3-JonesampTidwell2012.pdf*
[151] Wolf Bay Watershed Management Plan. 2020. Accessed 07/11/2024.
https://www.mobilebaynep.com/assets/pdf/Wolf_BayWMP_web.pdf
[152] Dog River Watershed Management Plan. 2017. Accessed 07/11/2024.
https://www.mobilebaynep.com/assets/pdf/Dog_River_Watershed_Management_Plan.pdf

Alabama.[153] Specifically, ADEM recommends that riparian area protection and water quality improvement be addressed via a holistic WMP and that CWA section 319 funds be used to support restoration activities. Additionally, funding announcements to support the development of WMPs note that the WMPs should provide a strategy to restore coastal habitats that provide critical ecosystem services that are most stressed by anthropogenic causes, such as dredging and filling activities.[154,155] Incorporation of this strategy is reflected in the Dog River WMP which targets armored streams and bulkheads as critical areas that contribute to habitat loss. The WMP specifically identifies the need for riparian buffer restoration along several stretches of existing modified channels.

The MBNEP Science Advisory Committee developed the Mobile Bay Subwatershed Restoration Framework which is required to be included in all WMPs and restoration work. The framework provides standardized monitoring methodologies, including long-term monitoring, to assess changes in water quality and habitat quality and quantity that are applied to the operation and maintenance of existing modified channels. For example, the Dog River WMP calls for a quarterly sampling with permanent sample locations to maintain consistency over the 20-year duration of the plan. Once a management measure is implemented, sampling is to be used to determine success.

Eroding Streambanks and Shorelines
The eroding streambanks and shorelines management measure calls on states to:

1. Where streambank or shoreline erosion is a nonpoint source pollution problem, streambanks and shorelines should be stabilized. Vegetative methods are strongly preferred unless structural methods are more cost-effective, considering the severity of wave and wind erosion, offshore bathymetry, and the potential adverse impact on other streambanks, shorelines and offshore areas
2. Protect streambank and shoreline features with the potential to reduce NPS pollution, and
3. Protect streambanks and shorelines from erosion due to uses of either the shorelands or adjacent surface waters.

Alabama meets the eroding streambanks and shorelines condition through its comprehensive shoreline mapping effort, watershed management planning efforts, and encouragement and implementation of living shoreline projects that protect streambank and shoreline features with the potential to reduce nonpoint source pollution.

[153] Alabama Department of Environmental Management Nonpoint Source Unit. Alabama Coastal Nonpoint Pollution Control Program. Hydromodification Management Measure Technical Report. April 2022. Copy available upon request.
[154] Mobile Bay National Estuary Program. Notice for the Request for Qualifications Eastern Delta Watershed Management Planning. 2021. Accessed 07/11/2024.
https://www.mobilebaynep.com/assets/pdf/2021_09_15_RFQ_EasternDeltaWMP.pdf
[155] Mobile Bay National Estuary Program. Notice for the Request for Qualifications Western Delta Watershed Management Planning. 2021. Accessed 07/11/2024.
https://www.mobilebaynep.com/assets/pdf/2021_09_15_RFQ_WesternDeltaWMP.pdf

As previously noted under the subsection for channelization and channel modification, ADCNR partnered with the Geographic Survey of Alabama to undertake a comprehensive shoreline mapping effort for Baldwin and Mobile counties.[156] In addition to shoreline mapping previously described, another project outcome was a shoreline change analysis that quantified erosion and accretion rates. For example, Phase 3 of the mapping project included Bayou La Batre as a study area and shoreline change analysis indicated erosion was highest to the east of the mouth of Bayou La Batre. Streambank type, streambank protection and shoreline change analysis from Phase 3 were used in the Bayou La Batra WMP to determine shoreline vulnerabilities which included streambank erosion in upper reaches of the watershed due to high flow events and erosion behind failing bulkheads.[157] The WMP included several short-term strategies to address these vulnerabilities such as increasing ”natural” shorelines within the bayou to reduce shoreline erosion, conducting an education campaign to waterfront property owners about natural shoreline stabilization, and replacing hard stabilization structures with ”natural” shorelines.

Alabama has also developed several guidebooks and programs to promote the use of living shorelines and other vegetative methods when stabilizing eroding streambanks consistent with the 6217(g) guidance. The MBNEP's *Living Shorelines Guidebook* and the Mississippi-Alabama Sea Grant *Living Shorelines Permitting Guide for Alabama Homeowners* promote the use of living shorelines as a natural approach to protecting shorelines while restoring, creating, and preserving valuable habitat and reducing nonpoint source pollution.[158,159,160] This project is part of a larger effort being undertaken in Alabama and around the Gulf to promote living shorelines as an alternative to bulkheads and similar shoreline erosion abatement structures. Living shoreline projects that have been implemented include the Shell Belt and Coden Belt Roads Living Shoreline project in the Bayou La Batre watershed. These projects installed shoreline breakwaters to decrease wave energy and protect newly planted emergent vegetation to aid in the reduction of nonpoint source pollution and runoff.[161] The breakwaters are expected to grow into reefs that support benthic habitat growth, including bivalves and marsh vegetation which also aids in reducing pollution and increasing water quality. In another project,

---

[156] Comprehensive Shoreline Mapping, Baldwin and Mobile counties, Alabama: Phase 1-3. 2009-2021. Accessed 07/11/2024. Phase 1: *https://www.mobilebaynep.com/assets/pdf/Shoreline-Mapping-Baldwin-Mobile-Counties-AL-PhaseI-JonesTidwell-Darby2009.pdf*
Phase 2: *https://www.mobilebaynep.com/assets/pdf/Shoreline_Mapping-Baldwin_amp_Mobile_Counties2C_AL-Phase2_JonesampTidwell2011.pdf*
Phase 3: *https://www.mobilebaynep.com/assets/pdf/Shoreline_Mapping-Baldwin_amp_Mobile_Counties2C_AL-Phase3-JonesampTidwell2012.pdf*

[157] Bayou La Batre Watershed Management Plan. 2018. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/BLB_PlanFinal.pdf*

[158] Mobile Bay National Estuary Program. Living Shorelines: A Guide for Alabama Property Owners. not dated. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/uploads/main/Living_Shorelines-10_30_14-Proof.pdf*

[159] Mississippi-Alabama Sea Grant. Living Shorelines: A Permitting Guide for Alabama Homeowners. not dated. Accessed 07/11/2024. *https://extension.msstate.edu/sites/default/files/publications/publications/P3120_web.pdf*

[160] Alabama Living Shorelines Restoration and Monitoring Project and Monitoring Project. 2011. Accessed 07/11/2024. *https://www.restorethegulf.gov/sites/default/files/Alabama%20Living%20Shorelines%20Restoration%20and%20Monitoring%20Project.pdf*

[161] Shell Belt and Coden Belt Roads Living Shoreline Project. not dated. Accessed 07/11/2024. *https://la-dwh.com/wp-content/uploads/2017/12/Final-Chap-11.pdf*

approximately 28 acres of coastal marsh and 1.5 miles of breakwaters were constructed at the mouth of the Bayou La Batre River.[162]

Alabama relies on a mix of county ordinances, watershed planning efforts, land acquisition, and establishment of no-wake zones to implement the second and third elements of the eroding streambanks and shorelines management measure. Additionally, as noted in the rationale for the site development management measure, the NPDES Construction General Permit (ALR100000) for construction activities requires that a 25-foot natural riparian buffer zone adjacent to all waters of the State shall be preserved, to the maximum extent practicable, during construction activities at the site. This water quality buffer zone aids in the protection of streambank and shoreline features from nonpoint source pollution and erosion due to upland construction activities.

As discussed in the rationale for the watershed protection management measure, local municipalities and counties within the coastal nonpoint management area have enacted rules and ordinances to protect water quality and habitat within their jurisdictions that achieve the goals of the eroding streambanks and shorelines hydromodification management measure. For example, Mobile County's Subdivision Regulations require a no-disturbance buffer zone within 100 feet of a public drinking water source (Section 5.A.1).[163] Additionally, regulations require a setback buffer zone within 50 feet of perennial streams and associated wetlands and within 25 feet of natural drainage features and their associated wetlands to protect streams and shorelines from polluted runoff from development activities (Section 2 and Section 5.D.2).[164]

In addition to the regulatory approach, Alabama uses its watershed planning process to help address the eroding streambanks and shoreline hydromodification management measures. WMPs have identified eroding streambanks and carried out living shoreline projects, such as those noted within the Bayou La Batre River. WMPs have also identified strategic land acquisition opportunities to protect shoreline features from erosion and nonpoint source pollution. For example, the Gulf Frontal WMP identified cities, such as Orange Beach, that developed plans for the acquisition of land for conservation and easements to protect areas that are highly vulnerable to loss or damage from coastal hazards or that offer natural protection from coastal hazards. Land parcels near Wolf Bay and Fort Morgan have also been prioritized for protection; the selected parcels are highly vulnerable to erosion damage from coastal hazards or offer natural protection from shoreline erosion and provide additional water quality benefits.[165]

---

[162] National Fish and Wildlife Federation. Gulf Environmental Benefit Fund. Lightning Point Restoration Project. 2019. Accessed 07/11/2024. *https://www.nfwf.org/sites/default/files/gulf/Documents/al-lightning%20point%20ii-18.pdf#:%7E:text=Lightning%20Point%20Restoration%20Project%20%E2%80%93%20Phase%20II%20This,the%20mouth%20of%20the%20Bayou%20La%20Batre%20River*

[163] The City of Mobile Alabama Planning Section of the Urban Development Department. Subdivision Regulations. 2008. Accessed 07/11/2024. *https://www.cityofmobile.org/pdf/SUBREGS.pdf*

[164] The City of Mobile Alabama Planning Section of the Urban Development Department. Subdivision Regulations. 2008. Accessed 07/11/2024. *https://www.cityofmobile.org/pdf/SUBREGS.pdf*

[165] Gulf Frontal Complex Watershed Management Plan. 2021. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Gulf-Frontal-WMP-Draft-for-web.pdf*

In order to protect and restore shorelines, the Bayou La Batre WMP identified critical habitat and water quality restoration or preservation areas within and adjacent to the mouth of Bayou La Batre River for land acquisition.[166] These watershed planning efforts have already resulted in the acquisition of more than 120 acres of coastal habitat as part of a larger-scale restoration project of the mouth of the Bayou La Batre River.

As discussed under the marina and recreational boating section, the Gulf Frontal WMP describes how the City of Orange Beach implemented no-wake/no motor zones near the Islands of Perdido in 2022 to combat shoreline erosion. The city is partnering with others to install "no-wake/no-motor zone" buoys at the islands to protect the islands and track any future shoreline change.

Enforceable Policies and Mechanisms for Hydromodification
Alabama has demonstrated that it has enforceable policies and mechanisms in place to ensure the implementation of the hydromodification management measure. The State provided a legal opinion from the Attorney General stating that the Alabama Water Pollution Control Act (Ala. Code §22-22-1 to §22-22-14 (1997)) provides ADEM with the authority to require the implementation of management measures to prevent nonpoint source pollution to coastal waters, when needed.[167] ADEM also provided a follow up letter clarifying that the State could specifically require implementation of the 6217(g) management measures.[168] The State has described the mechanisms that link the implementing agency with the enforcing agency and is committed to using its backup authority to implement the 6217(g) management measures, when needed.[169] The State tracks and evaluates implementation of the voluntary elements through its CWA section 319 annual reports, watershed management plans, and the MBNEP comprehensive monitoring framework. The MBNEP also has a database specifically to track implementation of WMP projects.

VII. WETLANDS, RIPARIAN AREAS AND VEGETATED TREATMENT SYSTEMS

1998 FINDING: Subject to the conditions in the boundary section, Alabama's program includes management measures in conformity with the 6217(g) guidance, except the program does not include management measures to promote the use of vegetative treatment systems. The State's program includes enforceable policies and mechanisms to ensure implementation within the existing coastal management area.

[166] Bayou La Batre Watershed Management Plan. 2018. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/BLB_PlanFinal.pdf*
[167] Letter from Bill Pryor, Attorney General, to James W. Warr, Director, Alabama Department of Environmental Management. February 15, 2002.
[168] Letter from Harry A. Lyles, Associate General Counsel, Alabama Department of Environmental Management to Dov Whitman (sic), Chief, Nonpoint Source Control Branch, U.S. Environmental Protection Agency and Josh Loss, Coastal Management Specialist, NOAA, Office of Ocean and Coastal Resource Management. June 11, 2003.
[169] Letter from J. Scott Brown, Chief of the Mobile Field Office, Alabama Department of Environmental Management to Allison Castellan, NOAA Office for Coastal Management and Don Waye, EPA Nonpoint Source Management Branch, RE: ADEM's Authority and Commitment to Prevent Non-Point Source Pollution. June 21, 2022.

1998 CONDITION: Within two years, Alabama will include in its program management measures to identify and implement opportunities to address problems in wetlands/riparian areas that are not covered under existing permit authorities. Within two years, the State will develop new authorities or modify existing authorities to ensure implementation of the first management measure throughout the coastal nonpoint management area. Within two years, Alabama will include in its program management measures to promote the use of vegetative treatment systems.

DECISION: Alabama has satisfied this condition.

RATIONALE: Alabama relies on a mix of regulatory and voluntary approaches to protect wetlands and riparian areas such as state regulations, county ordinances, its watershed management planning process, voluntary guides such as, *The Prioritization Guide for Coastal Habitat Protection in Mobile and Baldwin Counties, Alabama,* and other resources, such as the 2009 Mississippi-Alabama Habitats Tool (Habitat Mapper). The State uses a voluntary approach to promote the use of engineered vegetated treatment systems as a significant nonpoint source pollution abatement function through the Weeks Bay National Estuarine Research Reserve Coastal Training Program, its *Reducing Nonpoint Source Pollution: A Coastal Alabama Handbook*, and the *Low Impact Development Handbook for the State of Alabama*.

Protection of Wetlands and Riparian Areas
The management measure for the protection of wetlands and riparian areas calls for states to protect areas that are serving a significant nonpoint source abatement function and maintain these functions while protecting the other existing functions of these wetlands and riparian areas.

Alabama protects wetlands and riparian areas through State regulations such as its NPDES Construction General Permit for construction activities and Coastal Management Area Program regulations as well as policies for its coastal management program. Alabama's Construction General Permit requires that the construction site maintain a 25-foot natural riparian buffer along all waters of the State to the maximum extent practicable (ALR100000, Part III A).[170]

The Coastal Management Area Program regulations protect wetlands and riparian areas in several ways. Within the coastal area, a coastal management permit or coastal consistency certification is required pursuant to ADEM Admin. Code r. 335-8 which applies to projects impacting wetlands (dredge or fill), developments greater than five acres, shoreline stabilization, docks and piers, construction on beaches and dunes, and other similar activities impacting coastal resources.[171] The construction of piers, docks, boathouses and other pile supported structures must be designed and constructed to minimize impacts to wetlands and the construction of these structures over wetlands is prohibited (Admin. Code r. 335-8-2-.05). Bulkheads, rip-rap, and other structural shoreline armament are only permitted if the

[170] National Pollutant Discharge Elimination System General Permit. The State of Alabama: ALR100000. Not Dated. Accessed 07/11/2024. *http://adem.alabama.gov/newsEvents/notices/dec20/pdfs/12alr100000.pdf*
[171] Alabama Department of Environmental Management Coastal Area Management Program Division 355-8. Revised May 2013. Accessed 07/11/2024. *https://adem.alabama.gov/alEnviroRegLaws/files/Division8.pdf*

preservation and restoration of wetlands and other non-structural shoreline stabilization alternatives are not feasible and the construction of structural shoreline armament will not deposit fill material in wetlands (Admin. Code r. 335-8-2-.06). In addition, construction of new canals or expansions of existing canals through wetlands or uplands with the purpose or effect of creating new waterfront property, is not permitted (Admin. Code r. 335-8-2-.07 (2)).

The policies of Alabama's Coastal Area Management Program also support the protection of wetlands. Enforceable policies for wetlands and endemic submerged aquatic vegetation "encourage and support the protection of coastal wetlands," "support the preservation ...of coastal wetlands," and "encourage and support the use of best management practices in the management of upland and water-based activities in order to prevent or lessen adverse effects on coastal wetlands."[172] ADEM reviews permitting activities within the coastal area to ensure consistency with these policies.

Alabama's coastal counties and many of its coastal municipalities also have ordinances in place to protect wetlands and riparian areas. Specifically, the City of Daphne requires a 50-foot vegetated buffer along any flowing or ephemeral waterbody (City of Daphne Land Use and Development Ordinance 18-3-D(1)) and that development be set back a minimum of 30 feet from a delineated wetland boundary (Article XVIII 18-3-D(3)). The City of Foley also requires development to be set back 30 feet from wetlands and 50 feet from waterways (Code of Ordinances of Foley, Alabama, Sec. 4-121). Gulf Shores and Elberta require 30-foot setbacks between developments and wetlands (Code of Ordinances of Gulf Shores, Alabama Sec. 7-552, Elberta Code of Ordinances §5.2.3). Elberta also requires that development activities be set back 25 feet from waterways (Elberta Code of Ordinances §5.2.3). The City of Mobile requires development be set back 50 feet from a perennial stream and 25 feet from natural drainage features and wetlands (City of Mobile Unified Development Code Sec.64-3-8). The City of Semmes requires a "150-foot setback from a public drinking water source and any associated tributaries and/or wetlands, 100 feet of streams and associated wetlands, and within 75 feet of a natural drainage features, drainage easements, and adjacent and/or isolated wetlands" (City of Semmes Subdivision Regulations Sec. 3.4.1). Additionally, Satsuma prohibits "land-disturbing activities in proximity to a lake, natural watercourse, or adjacent property, unless a buffer zone is provided along the boundary of sufficient width to confine visible siltation and/prevent erosion (City of Satsuma Subdivision Regulations Sec. 4-8-2(1)).

Alabama has also provided information on several resources the State uses to encourage the protection of wetlands and riparian areas that are serving a significant nonpoint source abatement function. The Coastal Alabama Restoration Tool and *Prioritization Guide for Coastal Habitat Protection in Mobile and Baldwin Counties, Alabama* prioritizes specific marine and coastal habitats for protection. Focal habitats include wetlands, rivers, streams and

[172] ADCNR. 2017. Alabama Coastal Area Management Program IV. January 25, 2017. Accessed 07/11/2024. *https://www.outdooralabama.com/sites/default/files/Lands/Coastal/ACAMP%20IV%20-%20FINAL%20approved%20-%20Jan%2025%202017.pdf*

riparian buffers.[173,174] The 2016 Uplands/Wetland Habitat Mapping Project created an updated inventory of priority wetlands in need of protection and/or restoration.[175] In addition, the 2019 Habitat Conservation and Restoration Plan for Coastal Alabama was used to consolidate available data from the previous mapping projects and other efforts to develop a comprehensive plan.[176] Multiple wetland and riparian area protection projects have resulted from the plan including acquisition of 250 acres of coastal land along the Bon Secour River and the addition of roughly 250 acres of tidal wetlands to the Bon Secour National Wildlife Refuge that were designated as high conservation priority.

As previously described in the watershed protection section, the MBNEP oversees a watershed management planning process to develop and implement WMPs across the coastal nonpoint management area to protect, restore, and preserve natural areas that provide key water quality benefits or are susceptible to erosion. The WMPs include objectives and goals that help maintain and improve wetland function and call for the development of land protection and acquisition plans that leverage funds to ensure the protection of important wetland and riparian areas.

A few examples of how specific WMPs address the wetland and riparian protection management measure include the Dog River, Weeks Bay, and Wolf Bay WMPs. The Dog River WMP objectives include the acquisition of a minimum 1,000 acres of existing natural wetlands within the watershed.[177] The Weeks Bay WMP identifies significant tidal habitat areas around Weeks Bay that should be prioritized for protection, including tidal marshes and subwatershed areas with intact riparian buffers. One project stemming from the Weeks Bay WMP included the acquisition of 165 acres of wetlands within the watershed. The Wolf Bay WMP recommends the protection of water quality and ecosystem function through strategic acquisition of conservation tracts throughout the watershed including rivers and backwaters, including over 1,800 acres to protect the headwaters of Sandy Creek and Wolf Creek.[178]

Since the early 1990s, 73,373 acres have been acquired through the Alabama Forever Wild Land Trust in Alabama's coastal nonpoint program management area. These parcels are managed for conservation and public access by ADCNR. An additional, 49,307 acres in the coastal nonpoint program management area are also owned and managed for conservation and

---

[173] The Nature Conservancy. 2009. *Prioritization Guide for Coastal Habitat Protection and Restoration in Mobile and Baldwin Counties, Alabama*. December 2009. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Prioritization_Guide_for_Coastal_Habitat_Protection_and_Restoration_in_Mobile_and_Baldwin_Counties_Final.pdf*

[174] The Nature Conservancy and Mobile Bay National Estuary Program. (undated). Coastal Alabama Restoration Tool (CART). Accessed 07/11/2024. *https://maps.freshwaternetwork.org/alabama/*

[175] Mobile Bay National Estuary Program. 2017. 2016 Uplands/Wetlands Habitat Mapping Project. July 2017. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/MBNEP_2016_HABITAT_MAP_FINAL_REPORT_July_2017.pdf*

[176] Mobile Bay National Estuary Program. *Habitat Conservation and Restoration Plan for Coastal Alabama.* 2019. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/HabitatPlan_Final2019.pdf*

[177] Weeks Bay Watershed Management Plan. 2017. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Weeks_Bay_WMP_Main_Report_Final.pdf*

[178] Wolf Bay Watershed Management Plan. Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/Wolf_BayWMP_web.pdf*

public access by ADCNR. These parcels contain significant wetland and riparian areas in the Mobile-Tensaw River delta, the Grand Bay Savanna fronting Mississippi Sound, the Weeks Bay National Estuarine Research Reserve, the Perdido River and Bay corridor, Wolf Bay, and Bon Secour River. The Grand Bay and Bon Secour National Wildlife Refuges contain an additional 10,000 acres of protected habitat.[179,180,181] Supported through the U.S. Department of Agriculture, the Agricultural Conservation Easement Program is another voluntary conservation program that uses easements to protect wetlands and riparian areas on agricultural land.[182,183] Alabama further promotes the protection of riparian areas through the *Low Impact Development Handbook for the State of Alabama*.[184] The handbook discusses the importance of both the preservation and restoration of riparian areas to control nonpoint source pollution.

Alabama has demonstrated that it has enforceable policies and mechanisms in place to ensure the implementation of the protection of wetlands and riparian areas management measures. The State provided a legal opinion from the Attorney General stating that the Alabama Water Pollution Control Act (ALA. CODE §22-22-1 to §22-22-14 (1997)) provides ADEM with the authority to require the implementation of management measures to prevent nonpoint source pollution to coastal waters, when needed. ADEM also provided a follow up letter clarifying that the State could specifically require implementation of the 6217(g) management measures. The State tracks and evaluates implementation of the voluntary elements through its CWA section 319 annual reports, watershed management plans, and the MBNEP comprehensive monitoring framework. The MBNEP also has a database specifically to track implementation of WMP projects. The State has described the mechanisms that link the implementing agencies (ADEM, local governments) with the enforcing agency (ADEM) and provided a letter stating its commitment to using its backup authority to implement the 6217(g) management measures, when needed.[185] In addition to how Alabama specifically plans to track implementation of its targeted approach for new development described in the new development section above, the State also tracks and evaluates implementation of the voluntary elements of the site development management measure through its CWA section 319 annual reports, watershed management plans, and the MBNEP comprehensive monitoring framework.

---

[179] Alabama Department of Environmental Management. Alabama Coastal Nonpoint Pollution Control Program: Wetlands and Riparian Areas Management Measure Technical Report. May 2022. Copy available upon request.
[180] Alabama Department of Conservation and Natural Resources Forever Wild Land Trust. Not Dated. Accessed 07/11/2024. *https://www.alabamaforeverwild.com/*
[181] South Alabama Land Trust. Not Dated. Accessed 07/11/2024. https://southalabamalandtrust.org/
[182] U.S. Department of Agriculture. Agriculture Conservation Easement Program. Not Dated. Accessed 07/11/2024. *https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/*
[183] U.S. Department of Agriculture. Agriculture Conservation Easement Program Fact Sheet. September 2021. Accessed 07/11/2024. *https://www.nrcs.usda.gov/sites/default/files/2022-10/Easements%20ACEP%20Right%20For%20Me%20factsheet.pdf*
[184] Alabama Department of Environmental Management Alabama Cooperative Extension System Auburn University. Low Impact Development Handbook for the State of Alabama. 2007. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf*
[185] Letter from J. Scott Brown, Chief of the Mobile Field Office, Coastal Zone Management Program, Alabama Department of Environmental Management. To Allison Castellan, Office for Coastal Management, NOAA, and Don Waye, Nonpoint Source Management Branch, EPA. June 21, 2022. ADEM's Authority and Commitment to Prevent Non-Point Source Pollution.

Vegetated Treatment Systems
The management measure for vegetated treatment systems calls on states to promote the use of engineered vegetated treatment systems such as constructed wetlands or vegetated filter strips where these systems will serve a significant nonpoint source pollution abatement function.

One of the main ways Alabama promotes vegetated treatment systems to control nonpoint source pollution is through the *Low Impact Development Handbook for the State of Alabama* (LID Handbook).[186] The LID Handbook promotes the use of BMPs such as vegetated swales, vegetated buffer strips, constructed stormwater wetlands, infiltration swales, wet swales, grasses filter strips, and bioretention cell systems to reduce nonpoint source pollution. Alabama also holds workshops and training programs that target engineers and decision-makers to encourage the use of vegetated treatment systems to control stormwater runoff. These include the Weeks NERR Coastal Training Program (CTP) and Auburn University's Stream Restoration Workshops and Storm Water Management Program. The Weeks Bay NERR CTP developed a multi-faceted stormwater program that includes specialized LID training sessions, a low-impact development guidebook to promote innovative runoff and infiltration methods, many of which included vegetated treatment systems.[187] The Stream Restoration Workshop sponsored by Auburn University is a classroom and field learning workshop that was designed to introduce the concepts of stream restoration using natural channel design and floodplain grading techniques as well as vegetative treatment BMPs and the workshop materials also address how to build maintenance plans and practices into existing management systems.[188]

VIII. ADMINISTRATIVE COORDINATION

1998 FINDING: Alabama's program does not include mechanisms to improve coordination among State agencies and between State and local officials.

1998 CONDITION: Within one year, Alabama will establish a process for ensuring coordination among State and local agencies with a role in the implementation of the coastal nonpoint program.

DECISION: Alabama has satisfied this condition.

RATIONALE: Alabama has developed several MOAs and other interagency mechanisms that collectively satisfy this condition. Through its status as lead agency for the statewide nonpoint source management program, ADEM has entered MOAs with several State agencies detailing their respective roles in nonpoint source pollution management. These include MOAs related to

[186] Alabama Department of Environmental Management Alabama Cooperative Extension System Auburn University. Low Impact Development Handbook for the State of Alabama. 2007. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf*
[187] Weeks Bay National Estuarine Research Reserve. Management Plan 2017-2022. June 2017. Accessed 07/11/2024. *https://coast.noaa.gov/data/docs/nerrs/Reserves_WKB_MgmtPlan.pdf*
[188] Auburn University. Stream Restoration Inspection and Maintenance Workshop. Accessed 07/11/2024. *https://mell-base.uce.auburn.edu/wconnect/coursestatus.awp?&course=C200211&publish=ANYWAY*

agriculture,[189] forestry,[190] and public health.[191] Staff from Alabama's two lead agencies for the coastal nonpoint program lead or participate in several additional committees, the MBNEP's various committees, including the Government Network Committee,[192] Project Implementation Committee,[193] the Inter-Agency Regulations Committee facilitated by the Alabama Coastal Foundation, and the Weeks Bay National Estuarine Research Reserve Advisory Committee. These committees serve as additional forums to coordinate the implementation of Alabama's coastal nonpoint program.

IX. MONITORING

1998 FINDING: Alabama's program does not include a plan to assess over time the success of the management measures in reducing pollution loads and improving water quality.

1998 CONDITION: Within one year, Alabama will develop a plan that enables the State to assess over time the extent to which implementation of management measures is reducing pollution loads and improving water quality.

DECISION: Alabama has met this condition.

RATIONALE: The 6217(g) guidance calls for states to develop monitoring and evaluation programs to:

1. measure changes in pollution loads and in water quality that may result from the implementation of the 6217(g) management measures; and
2. ensure the management measures are implemented, inspected, and maintained properly.

NOAA and EPA's 1998 findings for the Alabama Coastal Nonpoint Program state: "While Alabama states that it has a suitable monitoring program, it provides very little information regarding the details of existing efforts, and it does not describe how these efforts will be applied to the coastal management program. Alabama should include information regarding the number and location of monitoring stations, the types and frequency of water quality data being collected, methods for tracking management measure implementation, and the analytic

[189] Mutual Agreement Between the United States Department of Agriculture and the State of Alabama and the Baldwin County Soil and Water Conservation District for their Cooperation in the Conservation of Natural Resources. October 21, 1996.
[190] Alabama Forestry Commission and Alabama Department of Environmental Management. 2017. Memorandum of Agreement Between the Alabama Forestry Commission and the Alabama Department of Environmental Management. Executed August 22, 2017.
[191] Memorandum of Agreement between the Alabama Department of Environmental Management and the Alabama Department of Public Health for Planning and Technical Assistance in Water Quality Activities. October 4, 1999.
[192] Mobile Bay National Estuary Program. (undated). Government Networks Committee (website). Accessed 07/11/2024. *https://www.mobilebaynep.com/who-we-are/management_conference/government_networks_committee*
[193] Mobile Bay National Estuary Program. (undated). Project Implementation Committee (website). Accessed 07/11/2024. *https://www.mobilebaynep.com/who-we-are/management_conference/project_implementation_committee*

approaches that will be employed in conjunction with existing monitoring efforts to assess the success of management measures in achieving water quality objectives."[194]

ADEM's State *of Alabama Water Quality Monitoring Strategy* provides a statewide strategy for water quality monitoring in Alabama.[195] The strategy is implemented on a five-year rotating basin cycle and concludes with an in-depth review of the data collected during the five-year period. Alabama employs a mix of targeted, probabilistic and long-term water quality monitoring stations to understand trends, assess water quality impairments, inform the development of TMDLs and watershed management plans, and evaluate the effectiveness of implementing practices to control nonpoint source pollution. The State relies largely on two ambient water quality monitoring networks to assess water quality within the coastal nonpoint management area: the Rivers and Streams Monitoring Program (RSMP), and the Coastal Waters Monitoring Program (CWMP). The RSMP consists of 88 ambient monitoring stations statewide that are assessed monthly April to October on a three-year basin cycle, with seven located within the coastal nonpoint management area. The CWMP includes 57 stations throughout State's wadable and non-wadable coastal waters. The CWMP sites are monitored 3-12 times per year depending on resources. Both ambient monitoring networks monitor a variety of physical and chemical parameters such as temperature, salinity, nutrients, sediment, and toxics. Alabama's Beaches Environmental Assessment and Coastal Health (BEACH) program monitors 25 additional sites for indicator bacteria (*Enterococci*). The BEACH sites are located at public recreation areas in coastal Alabama.

Alabama's biennial Integrated Water Quality Assessment and Monitoring Reports analyze the various water quality monitoring data to assess the quality of the State's waterways as required by sections 303(d) and 305(b) of the CWA.[196] The ACNPCP and the CWA section 319 grant program use the integrated reports to help prioritize and target resources to protect designated uses of unimpaired and threatened waters and restore impaired waters of the state. The CWA section 319 nonpoint source program grant guidelines place strong emphases on funding watershed-based projects to mitigate waters impaired by nonpoint sources identified on section 303(d) lists.[197,198]

Monitoring efforts conducted through Alabama's watershed planning process also support the State's ability to assess the extent to which management measure implementation is reducing pollutant loads and improving water quality. All WMPs within the coastal nonpoint management area are developed under the MBNEP's comprehensive management plan and

---

[194] NOAA and EPA. 1998. Alabama Coastal Nonpoint Program Findings and Conditions. June 30, 1998. Accessed 07/11/2024. *https://coast.noaa.gov/data/czm/pollutioncontrol/media/findal.txt*

[195] Alabama Department of Environmental Monitoring. 2017. State of Alabama Water Quality Monitoring Strategy. January 2017. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/wqsurvey/WQMonitoringStrategy.pdf*

[196] ADEM. 2022. *2022 Integrated Water Quality Monitoring and Assessment Report: Water Quality in Alabama 2020-2022.* April 1, 2022. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/waterforms/2022AL-IWQMAR.pdf*

[197] US EPA, Nonpoint Source Program and Grants Guidelines for States and Territories. Accessed 07/11/2024. *https://www.epa.gov/sites/default/files/2015-09/documents/319-guidelines-fy14.pdf*

[198] Alabama Department of Environmental Management. 2015. Alabama Nonpoint Source Management Program. Accessed 07/11/2024. *https://adem.alabama.gov/programs/water/nps/files/ALNPSMgmtProgramFramework.pdf*

therefore follow EPA's nine key elements for watershed plans.[199] In accordance with these requirements, Alabama's WMPs describe measurable milestones to determine whether actions to control nonpoint source pollution are being implemented, develop criteria to determine whether nonpoint source pollution load reductions are being achieved over time, and include a monitoring component to evaluate the effectiveness of implementation efforts over time.

In addition to these ambient and WMP monitoring efforts, Alabama has partnerships with NRCS, AFC, and Mobile and Baldwin counties, as discussed in the agricultural, forestry and OSDS sections above, to track and evaluate implementation of the 6217(g) management measures. Alabama coordinates with NRCS on annual status reviews of farms to ensure compliance with the 6217(g) guidance. Forestry management measure implementation is tracked through field investigations conducted and documented by the AFC and communicated to ADEM through their MOA. Baldwin and Mobile counties monitor and track the installation, inspection, repair, and pump-out of new and existing OSDS in accordance with Ala. Admin. Code r. 420-3. Baldwin and Mobile counties have OSDS databases to track inspections and pump-outs of operating OSDS. All certified OSDS inspectors and pumpers must record their information in the databases monthly.

Alabama further tracks and evaluates implementation of the voluntary elements of the urban management measures including watershed protection, existing development, wetland and riparian areas, new development, site development and hydromodification, through its CWA section 319 annual reports, watershed management plans, and the MBNEP comprehensive monitoring framework. The MBNEP maintains a database specifically designed to track implementation of watershed management plan projects. The ACNPCP works with its partners, including the MBNEP and CWA section 319 program, to address coastal nonpoint source reduction efforts and adaptively address nonpoint source issues that may arise throughout the coastal nonpoint management area. Through coordinated efforts, Alabama can assess the extent to which implementation of management measures is reducing pollution loads and improving water quality.

[199] MBNEP. 2019. *Respect the Connect: Comprehensive Conservation & Management Plan for Alabama's Estuaries & Coast 2019-2023.* Accessed 07/11/2024. *https://www.mobilebaynep.com/assets/pdf/FINAL-CCMP-11.25.2019.pdf*

List of Acronyms

6217(g)	Section 6217(g) of the Coastal Zone Act Reauthorization Amendment
ACES	Alabama Cooperative Extension System
ACNPCP	Alabama Coastal Nonpoint Pollution Control Program
ADCNR	Alabama Department of Conservation and Natural Resources
ADEM	Alabama Department of Environmental Management
ADPH	Alabama Department of Public Health
AFC	Alabama Forestry Commission
AFO	Animal Feeding Operation
ALDOT	Alabama Department of Transportation
AOWB	Alabama Onsite Wastewater Board
ASSESS	Sampling Environmental Indicators of Surface Water Quality Status
BMP(s)	best management practices
CAFO	Concentrated Animal Feeding Operation
CCMP	Comprehensive Conservation and Management Plan
CMS	Conservation Management System
CWA	Clean Water Act
CWMP	Coastal Water Monitoring Programs
CZARA	Coastal Zone Act Reauthorization Amendments
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
FOTG	Field Office Technical Guide
GIS	geographic information system
HUCs	hydrologic unit codes
IPM	integrated pest management
LID	low impact development
MBNEP	Mobile Bay National Estuary Program
MOA	Memorandum of Agreement
MS4	municipal separate stormwater system
NERR	National Estuarine Research Reserve
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source pollution
NRCS	National Resource Conservation Service
OSDS	onsite disposal systems
PIC	Project Implementation Committee
RESTORE	Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies
SAV	submerged aquatic vegetation
SWCD	Soil and Water Conservation Districts
TMDL	total maximum daily load
TSS	total suspended solids
USDA	United States Department of Agriculture
WMP	watershed management plan