

**GEORGIA COASTAL NONPOINT PROGRAM
NOAA/EPA DECISIONS ON CONDITIONS OF APPROVAL**

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 explains the bases for the determination by the National Oceanic and Atmospheric Administration (NOAA) and the United States Environmental Protection Agency (EPA) (collectively, Federal agencies) that Georgia has met the conditions that the Federal agencies had identified in the earlier approval of Georgia's coastal nonpoint program in 2002 pursuant to CZARA (2002 findings). The document discusses how the State program modifications satisfy each of the conditions and how the State's program otherwise conforms to the guidance document published under Section 6217(g) of CZARA.

DECISION

The Federal agencies issued findings on June 4, 2002, approving Georgia's coastal nonpoint program submission subject to conditions identified at that time. Those findings are available at https://coast.noaa.gov/czm/pollutioncontrol/media/6217ga_fnl.pdf. Since that time, Georgia 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 Georgia 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 document, titled *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*, 840-B-92-002 (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 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' 2002 findings to support approval of Georgia's program, with conditions, grouping together the conditions related to each major nonpoint source category or subcategory, as well as conditions related to Georgia's boundary and strategy for monitoring. The structure for each condition follows a standard format. Each original finding and condition identified in 2002 is repeated, followed by the Federal agencies' rationale for how the State has met each condition.

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

- [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 findings, extensive information that the State included in various submittals to support its coastal nonpoint program. Further information and analysis is contained in the administrative record for this approval decision and is 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: Don Wayne (202/566-1170)

NOAA, Office for Coastal Management
SSMC-4, N/OCM6
1305 East-West Highway
Silver Spring, MD 20910
Contact: Allison Castellan (240/533-0799)

U.S. EPA Region 4, Water Protection Division
Sustainable Communities and Watersheds Branch
61 Forsyth St., SW
Atlanta, GA 30303
Contact: Yolanda Brown (404/562-9451)

I. BOUNDARY

2002 FINDING: Georgia’s proposed 6217 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.

2002 CONDITION: Within one year, the Georgia Department of Natural Resources, EPA, NOAA, 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. Georgia's program will include management measures in conformity with the 6217(g) guidance, and enforceable policies and mechanisms that ensure implementation of the management measures throughout the coastal nonpoint management area.

DECISION: Georgia has satisfied this condition.

RATIONALE: Georgia has identified the State's existing coastal zone boundary as the boundary of the coastal nonpoint management area. The existing coastal zone encompasses the State's 11 coastal counties, which includes all six oceanfront Georgia counties (Chatham, Bryan, Liberty, McIntosh, Glynn and Camden) plus the five counties immediately inland (west) and adjacent to the ocean-front counties (Effingham, Long, Wayne, Brantley and Charlton). Outside of the Atlanta-metro region, this 11-county area is the fastest growing in Georgia. Thus, it is appropriate for the State to target its limited resources to address coastal nonpoint pollution to these coastal counties where high-growth activity is most likely to contribute to degraded coastal water quality.

Although the State has identified several existing sources of nonpoint pollution coming from areas adjacent to the coastal nonpoint management area, it has also identified actions it is taking to sufficiently justify why these sources are not expected to have a significant impact on coastal waters. For example, Georgia is specifically targeting coastal nonpoint pollution that could have impacts on its coastal waters by employing some 6217(g) management measures in the 13 counties immediately west of, and adjacent to, the 11-county coastal nonpoint management area. The State has provided several examples of how statewide programs, such as those addressing agriculture, forestry, urban stormwater, and onsite disposal systems, have been applied outside of the boundary to prevent or reduce polluted runoff before it flows to coastal waters.

The Federal agencies have determined that the illustrative suite of nonpoint source pollution management practices being implemented in areas inland from the 11-county boundary demonstrates a commitment by Georgia to protect healthy streams and restore degraded streams to attain and maintain water quality standards. Based on the information provided, the Federal agencies have determined that the coastal nonpoint management area sufficiently protects coastal waters from nonpoint source pollution, including sources that may originate inland from this management area.

The Federal agencies' guidance, titled *Flexibility for State Coastal Nonpoint Programs* (March 16, 1995) explains that the agencies "recognize the limitations of the data that were used in making boundary recommendations and... expect that some states and territories... may submit an alternative, less extensive coastal nonpoint management area than that originally recommended by NOAA and EPA." In addition, the Federal agencies' October 16, 1998, *Final Administrative Changes* guidance document allows states to "further exclude sources [of nonpoint pollution] ...on a geographic basis" where data show that "a source is not, and is not reasonably expected to, become significant, either individually or cumulatively." Based on the data supplied by Georgia and consistent with expectations of these two guidance documents, the Federal agencies approve Georgia's coastal nonpoint management area boundary.

II. AGRICULTURE

2002 FINDING: Georgia's program includes management measures in conformity with the 6217(g) guidance, except it does not include facility wastewater and runoff from confined animal facilities management measures (large and small units), or nutrient management measures. The State should provide a legal opinion that clearly states that the back-up authorities can be used to prevent nonpoint pollution and require management measure implementation. The State should strengthen its description of the voluntary or incentive based programs to implement the management measures, the description of the mechanism or process linking the implementing agency with the enforcement agency and its commitment to use the enforcement authority where necessary.

2002 CONDITION: Within two years, Georgia will include management measures for facility wastewater and runoff from confined animal facilities (large and small units) and nutrient management measures in conformity with the 6217(g) guidance. Within one year, Georgia will submit a legal opinion and supporting documentation to demonstrate that back-up authorities can be used as enforceable policies and mechanisms to implement the agriculture management measures throughout the coastal nonpoint management area, as described in the *Final Administrative Changes* (see Section XIV).

DECISION: Georgia has satisfied these conditions.

RATIONALE: Georgia's program includes 6217(g) management measures for Facility Wastewater and Runoff from Confined Animal Facility Management (Large and Small Units) and Nutrient Management. Georgia provided the Federal agencies with a supporting legal opinion on June 6, 2007, which demonstrates that the State has the enforceable authority to prevent nonpoint pollution and that the State has adequate backup authority to prevent nonpoint source pollution and implement the agriculture management measures consistent with the 6217(g) guidance.

With regard to direct enforceable authorities, Georgia's Water Quality Control Regulations (GAC 391-3-6-.20 and 391-3-6-.21) are applicable to:

- All swine animal feeding operations (AFOs) with more than 300 animal units (>750 swine)
- All AFOs with more than 1000 animal units
- All AFOs with more than 300 animal units other than operations that handle dry manure

The regulations require all AFOs to store wastewater and runoff caused by storms up to and including either a 100-year, 24-hour frequency storm (swine AFOs) or a 25-year, 24-hour frequency storm (other AFOs). New AFOs must have waste handling and storage facilities that meet Natural Resources Conservation Service (NRCS) design criteria and cannot be located in a 100-year flood plain, discharge to surface water, or discharge to groundwater if contaminants exceed Georgia's Safe Drinking Water Standards (GAC 391-3-6-.20 and 391-3-6-.21). In

addition, AFOs located within significant groundwater recharge areas must have synthetic or compacted clay liners (GAC 391-3-6.21(4)(e)), whereas swine AFOs greater than 5000 animal units must have synthetic liners (GAC 391-3-6.20(4)(g)) and meet additional design specifications. These regulations are in conformance with or exceed requirements of the management measure for Facility Wastewater and Runoff from Confined Animal Facility Management for Large Units, which require storing wastewater and runoff caused by 25-year, 24-hour frequency storms and managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

The regulations also require these AFOs to develop and implement comprehensive nutrient management plans (NMPs). The plans must identify (GAC 391-3-6-.21(2)(m)):

...actions or priorities that will be followed to meet clearly defined nutrient management goals at an agricultural operation. Defining nutrient management goals and identifying measures and schedules for attaining the goals are critical to reducing threats to water quality and public health. The NMP should address activities related to compliance with effluent limitations and other permit requirements, including manure handling and storage, land application of manure and wastewater, site management, record keeping, and management of other utilization options. For an AFO with a liquid manure handling system, the NMP must be developed or modified by a “certified specialist” as defined by the Division. ... For an AFO that handles dry manure, the NMP must be developed by a person trained in the subject by an academic or trade organization. It should include emergency response planning and a closure plan for abandonment of any facility used for the treatment or storage of animal waste.

In addition to these regulatory requirements, Georgia is employing a suite of voluntary programs to encourage the implementation of the management measure for small unit confined animal facilities that are consistent with the 6217(g) guidance. As part of its strategy, the Georgia Soil and Water Conservation Commission (GSWCC) Enhanced Agricultural Nonpoint Program conducts farm assessments to help facility operators identify opportunities to implement conservation practices to address potential threats to water quality, including from animal waste and nutrient application, and periodically update their nutrient management plans. All conservation practices that GSWCC recommends through this one-on-one technical assistance conform to the NRCS Technical Field Guide for concentrated animal feeding operations (CAFOs) and nutrient management. The NRCS Field Guide practices are consistent with the 6217(g) management measures. During the assessment process, GSWCC personnel also discuss funding and implementation options to further assist facility operators with implementing the recommended practices on the ground. Many of these funding mechanisms are designed to incentivize adoption of these practices. For example, facilities receiving any cost-share or Federal grant funds from NRCS’s Environmental Quality Incentives Program or EPA’s Clean Water Act (CWA) Section 319 Program to support nutrient management planning must follow the NRCS 590 standard for nutrient management.

Beyond one-on-one technical assistance to facility operators, GSWCC hosts “field days” in order to provide farmers with the opportunity to learn about water quality best management practices, including practices for CAFOs and nutrient management, from peers and experts from GSWCC,

NRCS, and Georgia Environmental Protection Division (GA EPD). Georgia specifically targets areas with the highest concentration of farms not covered by CAFO permits to encourage their participation in field days and one-on-one technical assistance programs. Targeted outreach and assistance on particular conservation practices is also used in certain areas based on an understanding of local need.

The University of Georgia (UGA) Cooperative Extension Office's *Small Farm Nutrient Management Primer* is another component of the State's voluntary strategy to address the 6217(g) management measures for small unregulated farm operations. For example, Chapter 3 ("Manure Storage and Treatment Systems") discusses design principles, such as controlling runoff for a 25-year, 24-hour frequency storm, and operation and maintenance practices such as monitoring runoff to ensure prevention of significant increases in pollutant loads to groundwater, for different types of manure storage facilities. Chapter 4 ("Nutrient Budgeting with Nitrogen and Phosphorus") describes the overall process for developing, implementing, and periodically updating nutrient management plans (including nitrogen and phosphorus budgeting) for a range of agricultural operations. It also presents management practices to include in a nutrient management plan such as inventorying nutrient sources, soil testing, and assessing crop nutrient needs to ensure that nutrients applied to crops will not build up in the soil and run off to nearby surface waters. Chapter 5 ("Land Application Procedures and Equipment") discusses evaluating the environmental suitability of the site for nutrient application, timing of nutrient application and the importance of equipment calibration and various best management practices for nutrient land application such as providing buffers for streams and wetlands. Printed copies of the primer are distributed across a 24-county area comprised of the 11-county coastal nonpoint management area and the 13 adjacent counties directly to the west. Additionally, the primer has been emailed to all UGA Cooperative Extension agents and is available on the GA EPD and UGA websites.

Another key outreach document for addressing the nutrient management measure is the State's *Best Management Practices for Georgia Agriculture: Conservation Practices to Protect Surface Water Quality*. With assistance from the GSWCC and UGA, the State updated the guide in 2013 to include an expanded section on nutrient management planning. This guide promotes nutrient management plans and presents a step-by-step process for developing them for different types of agricultural operations, including animal production and row crop agriculture, across a variety of settings. The guide also promotes and references the NRCS 590 Nutrient Management Planning standard. The updated guide is web-friendly with interactive links throughout, and is being widely distributed to Georgia's agricultural community in both print form and online.

Georgia is currently partnering with UGA to develop a series of sector-specific agriculture best management practice (BMP) manuals (i.e., poultry, cotton, peanuts, beef and dairy cattle) for coastal Georgia. Topics to be covered within these manuals will include: sector-specific BMPs, nutrient management, water conservation, funding mechanisms, rules and laws, and specific contact information for each sector.

In addition to guidance manuals, Georgia also provides training on animal feedlot wastewater management and nutrient management planning as part of its Agricultural Pollution Prevention

Program. Workshops address topics such as poultry nutrient management, calibration demonstrations for litter spreaders, and specific training for nutrient management specialists.

In 2012, the GSWCC began a voluntary Multi-Phased Nutrient Management Planning Initiative for poultry and livestock operations in a portion of coastal Georgia, the Altamaha River Basin. This priority area drains portions of four counties within Georgia's 11-county coastal nonpoint management area (Long, Wayne, McIntosh and Glynn counties). Farmers who participate in this project receive a free on-farm assessment, soil testing, an updated nutrient management plan, and an incentive payment for participation in the program. The assistance focuses heavily on developing and/or updating nutrient management plans that are consistent with the 6217(g) management measures, as well as GA EPD Rule 391-3-6. Georgia established this program within the coastal nonpoint management area in 2015. The State is in the process of expanding the program to include the 13 next-tier inland counties through a CWA Section 319(h) grant project. Additionally, Georgia has directly developed nutrient management plans for 80 small farms that apply poultry litter to their croplands and pastures across the 24 counties closest to Georgia's coast.

To the extent that Georgia relies on voluntary approaches to implement agriculture management measures, the State program is backed up with enforceable policies and mechanisms. First, the 2007 Georgia legal opinion demonstrates how the Water Quality Control Act (O.C.G.A. § 12-5-20, *et seq.*) provides adequate legal authority for the State to ensure the implementation of the 6217(g) agriculture management measures, as needed. NOAA and EPA's 2002 findings for Georgia's coastal nonpoint program previously described how Georgia has committed to using existing enforcement authorities to achieve implementation of the management measures where necessary and how the GA EPD, the enforcing agency, works with implementing agencies, such as GSWCC and UGA Extension, to take enforcement action when needed. The State has also described how it tracks and evaluates the implementation of the voluntary agriculture programs through its annual CWA Section 319 reporting.

III. FORESTRY

2002 FINDING: Georgia's program includes management measures in conformity with the 6217(g) guidance. Georgia has not provided sufficient justification to support a categorical exclusion of forestry from its coastal nonpoint program. The State should provide a legal opinion that clearly states that the back-up authorities can be used to prevent nonpoint pollution and require management measure implementation.

2002 CONDITION: Within one year, Georgia will submit a legal opinion and supporting documentation to demonstrate that back-up authorities can be used as enforceable policies and mechanisms to implement the forestry management measures throughout the coastal nonpoint management area, as described in the *Final Administrative Changes* (see Section XIV).

DECISION: Georgia has met this condition.

RATIONALE: As noted in Section II above, Georgia’s 2007 legal opinion demonstrates that the State has the enforceable authority to prevent nonpoint pollution and requires implementation of the 6217(g) management measure for forestry. To the extent that Georgia relies on voluntary approaches to implement various forestry management measures, the State program provides the appropriate legal backup with enforceable policies and mechanisms, which are documented in Georgia’s 2007 legal opinion. This opinion explains that the Water Quality Control Act (O.C.G.A. § 12-5-20, *et seq.*) provides adequate back-up authority to ensure the implementation of the 6217(g) forestry management measures, as needed. NOAA and EPA’s 2002 findings for Georgia’s coastal nonpoint program previously described how Georgia is committed to using existing enforcement authorities to achieve implementation of the management measures where necessary, and how the Georgia Forestry Commission (GFC), the State’s lead agency for implementing the forestry program, works with GA EPD to take enforcement action when needed. Georgia tracks and evaluates implementation of the voluntary forestry program through compliance surveys issued every other year and random audits of forestry operations. In addition, the GFC has also used CWA Section 319 funds to support a forestry best management practices assurance monitoring program, which monitors all forestry operations with a focus on sites located near impaired streams with total maximum daily loads (TMDLs).

IV. URBAN

A. NEW DEVELOPMENT

2002 FINDING: The Georgia program does not include management measures for new development in conformity with the 6217(g) guidance. The State does not include management measures to reduce total suspended solids (TSS) by 80% after the construction site is permanently stabilized, or to maintain post-development peak runoff rates at pre-development levels in conformity with the 6217 guidance. The State should provide a legal opinion that clearly states that the back-up authorities can be used to prevent nonpoint pollution and require management measure implementation. The State should strengthen its description of the voluntary or incentive based programs to implement the management measures, the description of the mechanism or process linking the implementing agency with the enforcement agency and its commitment to use the enforcement authority where necessary.

2002 CONDITION: Within two years, Georgia will include management measures in conformity with the 6217(g) guidance. Within one year, Georgia will develop a strategy to implement the management measure throughout the coastal nonpoint management area. Within one year, Georgia will submit a legal opinion and supporting documentation to demonstrate that back-up authorities can be used as enforceable policies and mechanisms to implement the new development management measure throughout the coastal nonpoint management area as described in the *Final Administrative Changes* (see Section XIV). For activities exempted by the Erosion and Sedimentation Act, the State needs to strengthen its description of the voluntary- or incentive-based programs to implement the new development management measure, the description of the mechanism or process linking the implementing agency with the enforcement agency, and its commitment to use the enforcement authority where necessary.

DECISION: Georgia has satisfied these conditions.

RATIONALE: Georgia met the New Development Management Measure through publication of its Coastal Stormwater Supplement (CSS) to Georgia’s Stormwater Manual and promotion and adoption of the standards in the supplement among a growing number of counties and municipalities across its coastal nonpoint management area. Georgia’s legal opinion concluded that Georgia has the authority to prevent nonpoint source pollution, including urban nonpoint source pollution, and to require management measure implementation consistent with 6217(g) requirements for protection of coastal waters.

The CSS establishes runoff-reduction design criteria to meet performance standards in conformity with EPA’s 6217(g) guidance. These green infrastructure design criteria incorporate natural resources protection, better site planning, and low impact development (LID) to reduce total suspended solids (TSS) by at least 80 percent after the construction site has been permanently stabilized and maintains post-development peak runoff rates at pre-development levels for the 1.2” average annual rainfall event. The CSS is enforceable at the local level when a locality adopts a corollary coastal stormwater ordinance. Georgia has successfully promoted this model ordinance among coastal localities. Georgia’s development, publication, and promotion of the CSS satisfies the condition that it develop a strategy to implement the management measure throughout the coastal nonpoint management area.

Not only has Georgia satisfied the condition to develop the implementation strategy, there is ample evidence that the strategy is being implemented or in the process of implementation throughout the coastal management area. The CSS is regulatory for all localities within the coastal nonpoint management area that are subject to National Pollutant Discharge Elimination System (NPDES) permit requirements applicable to a Municipal Separate Storm Sewer System (MS4), under Phase I and Phase II. It is also regulatory for MS4 communities in the 13 counties immediately west of, and adjacent to, the 11-county coastal nonpoint management area. Five of the 11 counties in Georgia’s coastal nonpoint management area (and the municipalities within those counties) are subject to Phase I or Phase II permitting: Chatham, Effingham, Liberty, Long and Glynn. In addition, Richmond Hill in Bryan County is also subject to Phase II permitting. For the remaining six counties, Georgia has implemented a targeted approach, which is allowed under the Federal agencies’ 1995 and 1998 guidance.¹ Specifically, of the six remaining counties, Georgia has implemented the management measure in the four counties where growth is more significant; Brantley has adopted the CSS; and three others (Bryan, Camden and McIntosh) have ordinances that are in conformity with the 6217(g) guidance. The remaining two counties, Wayne and Charlton, are largely rural, having a combined population of less than 45,000 with little to no population growth expected, so NOAA and EPA do not expect implementation of the management measure in these counties. In addition to county-level implementation, localities in the coastal nonpoint management area have adopted ordinances that implement the CSS stormwater management criteria, including the Fort Stewart military base,

¹From the 1998 guidance: “NOAA and EPA agree that states may focus resources on preventing and controlling significant impacts of nonpoint source pollution on living coastal resources and human health... NOAA and EPA do not expect states to implement management measures for nonpoint sources that do not, individually or cumulatively, have a significant impact on coastal waters.”

the independent city of Kingsland, and the city of Darien. The remaining independent city in the coastal nonpoint management area, St. Marys, has committed to adopting the CSS by 2020, both through its stormwater master plan and a CWA Section 319 grant commitment awarded in FY2017.

Georgia's CSS is an integral component in Georgia's Coastal Comprehensive Plan, which was mandated by a 2005 gubernatorial Executive Order (E.O. 02.11.05.01). Georgia's Coastal Regional Commission, charged with implementing the plan, continues to actively work with public and private stakeholders and coastal localities to promote the CSS. For instance, in 2011, the Coastal Regional Commission completed an extensive multi-year training program on the Supplement and continues to meet with local officials as part of the implementation of the Coastal Comprehensive Regional Plan. Since then, Georgia's coastal nonpoint program has conducted a multi-agency initiative to deliver technical assistance to all coastal municipalities and counties. The initial focus was to develop and promote model Green Growth Ordinances, which include the model ordinance for adoption of the CSS standard for implementing the new development management measure.

In 2016, the GA EPD, the Georgia Environmental Finance Authority, and Atlanta Regional Commission undertook a full revision of the Georgia Stormwater Management Manual to better incorporate many of the green infrastructure elements of the CSS. This updated manual now includes design criteria to manage post-construction stormwater runoff that conforms to the new development management measure; as of January 2, 2017, MS4 permittees west of the 24 coastal counties are required to use this edition, or an equivalent manual. Although adoption of the manual is voluntary outside of MS4 communities, it is being adopted by a growing number of localities, including Camden County in the coastal nonpoint management area, through local ordinances.

Consistency with the CSS is also required for certain projects needing a State-issued buffer variance under the Erosion and Sedimentation Act (O.C.G.A. § 12-7-6), as well as under the Rules of the Coastal Marshland Protection Act (GAC 391-2-3-.02) for new tidal wetland projects with an upland component. Additionally, Georgia's three construction stormwater general permits for: (1) Stand Alone Construction Projects; (2) Infrastructure Construction Projects; and (3) Common Developments, which apply to construction projects of at least an acre, encourage the use of green infrastructure stormwater practices in order to infiltrate, evapotranspire and reuse stormwater to the maximum extent practicable. These permits encourage the use of the Green Growth Guidelines' LID stormwater management practices updated to the CSS standards.

The 2002 condition related to the Erosion and Sedimentation Act exemption is no longer applicable because Georgia demonstrated that the new development management measure requirements are implemented through NPDES permitting, county ordinances, and other efforts, backed by enforceable authorities, that further promote best management practices consistent with the new development management measure.

B. EXISTING DEVELOPMENT

2002 FINDING: The Georgia program includes management measures for watershed protection, but does not include management measures for existing development in conformity with the 6217(g) guidance. The program includes enforceable policies and mechanisms to ensure implementation in portions of the 6217 management area, but not throughout the entire area.

2002 CONDITION: Within two years, Georgia will include management measures in conformity with the 6217 (g) guidance, and within one year, will include in its five-year program implementation strategy a plan to implement the management measures throughout the coastal nonpoint management area.

DECISION: Georgia has satisfied this condition to the extent it is not otherwise exempt from the management measure for existing development.

RATIONALE: State coastal nonpoint programs are no longer required to include the existing development management measure in urbanized areas subject to Phase I or Phase II NPDES municipal separate storm sewer systems (MS4) permits because these regulations are redundant with this management measure for those permitted areas. See NOAA/EPA memorandum, *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations*. Five of the 11 counties in Georgia's coastal nonpoint management area are currently subject to Phase I or Phase II permitting (Chatham, Effingham, Liberty, Long and Glynn, as well as the City of Richmond Hill in Bryan County).

Outside of these urbanized areas where state coastal nonpoint programs are not exempt from this measure, Georgia's coastal nonpoint program includes all four elements of the existing development management measure from the 6217(g) guidance:

- 1) Identify priority local and/or regional watershed pollutant reduction opportunities, e.g., improvements to existing urban runoff control structures;
- 2) Contain a schedule for implementing appropriate controls;
- 3) Limit destruction of natural conveyance systems; and
- 4) Where appropriate, preserve, enhance, or establish buffers along surface waterbodies and their tributaries.

For the first two elements, Georgia identified pollutant reduction opportunities in priority watersheds to address impacts from existing development and has established a 15-year schedule to address these opportunities across its coastal nonpoint management area. The strategy relies on a commitment to use a portion of CWA Section 319(h) funds each year for 15 years to support priority BMP/retrofit projects that address impacts from existing development within each of the eight urban cluster areas across the State's coastal nonpoint management area. For instance, Georgia will work with localities in these urban clusters to identify actively eroding areas attributable to existing development, repair the damaged areas, and install appropriate LID practices (such as rerouting downspouts to new bioretention areas) or other BMPs that address the root cause of the erosion. An urban cluster is defined by the U.S. Census Bureau as an area with a certain population density that has at least 2,500 and less than 50,000 people. The eight urban clusters within Georgia's coastal nonpoint management area are: Rincon, St. Simons Island, Folkston, Jesup, Darien, Springfield, St. Marys/Kingsland, and Bryan County. (A ninth

urban cluster area, Tybee Island, has been included in the NPDES MS4 permit coverage.) Georgia plans to focus on at least one urban cluster during each annual grant cycle, with most urban clusters addressed more than once. Georgia has begun this work with a CWA Section 319 project awarded in FY2017 to address chronic flooding issues in downtown St. Marys with green stormwater infrastructure solutions.

In addition to applying CWA Section 319 funds to these priorities, Georgia proposes to use Clean Water State Revolving Funds (CWSRF) to augment this effort. As part of the Water Resources Reform and Development Act of 2014, Section 603(c)(5) provides that each state's CWSRF may provide financial assistance for measures to manage, reduce, treat, or recapture stormwater or subsurface drainage water. Georgia incentivizes such projects by offering a one percent interest rate reduction for projects that conserve land and improve water quality, including green infrastructure projects and traditional BMPs for water quality treatment of stormwater runoff.

Georgia tracks progress on implementing its 15-year schedule to address priority watershed pollutant reduction opportunities across the eight urban clusters in the coastal nonpoint management area through the following mechanisms:

- CWA Section 319 annual reports from the State are used to track implementation of the CZARA management measures across the entire coastal nonpoint management area.
- EPA's Grants Reporting and Tracking System, which is an online database for CWA Section 319 projects used by all states and territories. Georgia will utilize this system in addition to the CWA Section 319 grant reports.
- CWSRF reporting requirements for projects that receive funding. The State will work to collect the reports for BMPs implemented in the urban cluster areas across the coastal nonpoint management area.

Georgia's program meets the third element of the existing development management measure (to limit destruction of natural conveyance systems) through implementation of:

- community watershed plans and regional water development and conservation plans, which are developed to maintain aquatic habitats and restore degraded streams;
- the State's Land Conservation Program, which has set aside more than \$100 million since 2005 in a revolving loan fund to purchase conservation lands and easements that meet State goals for water quality protection, flood protection, wetlands protection, reduction of erosion, protection of riparian buffers, and protection of areas that provide natural habitat and corridors for native plant and animal species; and
- UGA's 2009 *Hydromodification Best Management Practices Manual for Coastal Georgia*, which promotes practices that limit destruction of natural conveyance systems.

Georgia's program meets the fourth element of the existing development management measure (to preserve, enhance, or establish buffers) through implementation of:

- the State's Land Conservation Program;
- the Georgia Erosion and Sedimentation Act (O.C.G.A § 12-7-1), which requires 25-foot vegetated buffers along coastal marshlands; and
- rules promulgated under the State's Coastal Marshland Protection Act (CMPA) (GAC

391-2-3-.02), which requires a 50-foot vegetated buffer along coastal marshlands on CMPA-permitted projects for which there is an upland component.

E. CONSTRUCTION SITE CHEMICAL CONTROL

2002 FINDING: The Georgia program does not include management measures in conformity with the 6217(g) guidance for construction site chemical control. The State needs to provide a description of the voluntary or incentive based programs to implement this management measure, the description of the mechanism or process linking the implementing agency with the enforcement agency and its commitment to use the enforcement authority where necessary.

2002 CONDITION: Within two years, Georgia will include management measures in conformity with the 6217(g) guidance. Within one year, Georgia will develop a strategy (as part of the 5-Year Implementation Strategy) to implement the management measures throughout the coastal nonpoint management area.

DECISION: Georgia's program is exempt from the management measure for construction site chemical control.

RATIONALE: State coastal nonpoint programs need no longer include the construction site chemical control management measure because the NPDES permit application regulations for stormwater associated with industrial activities, including construction activity, apply nationwide (including the coastal nonpoint management areas of the various coastal states and territories) and have thus rendered the CZARA management measure redundant. See NOAA/EPA memorandum, *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations*.

F. (1) NEW ONSITE DISPOSAL SYSTEMS; AND (2) OPERATING ONSITE DISPOSAL SYSTEMS

2002 FINDING: Georgia's program includes management measures for new and operating onsite disposal systems (OSDS) in conformity with the 6217(g) guidance except it does not include measures for: (1) inspecting OSDS at a frequency adequate to ascertain whether OSDS are failing and (2) replacing or upgrading OSDS near nitrogen-limited surface waters. The State's program includes enforceable policies and mechanisms to ensure implementation throughout the management area.

2002 CONDITION: Within two years, Georgia will include management measures for (1) inspection and maintenance of existing onsite disposal systems (OSDS) and (2) protection of nitrogen-limited surface waters from OSDS runoff in conformity with the 6217(g) guidance.

DECISION: Georgia has met these conditions.

RATIONALE: With regard to inspecting existing OSDS at a frequency adequate to determine whether such an OSDS is failing, the Georgia Department of Public Health (GA DPH) is the

primary authority to regulate individual OSDS, including septic systems. GA DPH implements Title 31 Chapter 3 of the Official Code of Georgia (O.C.G.A. § 31-3), through County Boards of Health, which have the responsibility for enforcing regulations for OSDS at the local level. Each of the 11 counties in the coastal nonpoint management area has a health board, and each has adopted rules for implementing O.C.G.A. § 31-3. For new OSDSs, Georgia Department of Human Resources (GA DHR) Rules (GAC 511-3-1) require that new OSDS be located, designed, installed, operated and inspected to prevent the discharge of pollutants.

As part of Georgia's comprehensive "Digital Health Department" system, all Georgia counties provide, or directly enter, septic system and well information into the State's digital system, which archives all health department-related data and allows for interactive management and tracking of septic system inspections and permit information. Georgia is adding mapping capacity through its web-based GIS "Welstrom" database to the State's Digital Health System for planning and management purposes for the 11 counties in the coastal nonpoint management area. (Welstrom is the "Well and Septic Tank Referencing and Online Mapping" project, available online at www.sgwebmaps.com/welstrom.) Georgia regularly provides technical assistance to enable regional and local health departments to systematically track and manage septic systems through this geospatial system. The State analyzes this data to identify trends and to guide policy.

Two of the 11 counties within the coastal nonpoint management area, Brantley County and Charlton County, require inspections of OSDS as a condition of receiving an electrical permit to initiate electrical service to a residence (unless the previous OSDS inspection occurred within the prior five years for Brantley County or within the prior six months for Charlton County). These Counties' requirements compel inspections not only when there is a change of property ownership, but at any time electrical service is transferred to a new name (e.g., whenever a new renter signs a lease).

Inspections across Georgia are conducted in accordance with GA DHR Rules GAC 511-3-1 and the Manual for On-Site Sewage Management Systems adopted by the GA DPH (revised 2016). GA DPH inspectors use a standardized inspection form. In addition to requirements for comprehensive inspection of OSDS for all new construction, Georgia law requires comprehensive inspections by certified inspectors for:

- repairs to failed systems;
- pump-outs (all certified septic pumper/haulers are dual-certified as inspectors and must be recertified every two years; by law, whenever a septic tank is pumped, a thorough inspection by a certified inspector is required);
- expansions of existing systems as a result of property alterations;
- advanced onsite/decentralized wastewater treatment systems;
- evaluation of financing for federally backed mortgages (Fannie Mae & Freddie Mac);
- home safety inspections for adoption or fostering of children;
- complaints of suspected failures; and
- homeowner requests.

Cumulatively, these inspection triggers result in an average of 2,073 comprehensive inspections of operating OSDS across the coastal nonpoint management area each year (i.e., approximately 2.3 percent of the installed base of septic systems in Georgia's coastal nonpoint management area per year).

Additionally, since 1998, Georgia law has required effluent filters for all OSDS (GAC 511-3-1-.05). The filters are designed per National Sanitation Foundation Standard 46, Section 10, to prevent OSDS failures into the environment, and to effectively necessitate pumping approximately once every five years under normal use. By requiring the filtering device, the Department of Public Health not only takes a proactive approach to drain field failure, but also creates a system that will require servicing, inspections, and maintenance on a regular basis. Over time, the resident using an installed effluent filter experiences a decrease in OSDS functionality that necessitates cleaning and/or pumping by a certified contractor, and as noted above, an inspection is triggered. As of 2013, approximately 38 percent of the roughly 90,000 OSDS within the 11-county coastal nonpoint management area have these filters. This percentage is growing over time as new systems are added. Each year, approximately 1,800 new OSDS are installed in the coastal nonpoint management area, all with effluent filters. Moreover, as septic tanks are replaced or rehabilitated over time, the replacements are outfitted with these effluent filters. Based on data from county health departments (2004 to 2011), approximately 430 onsite septic systems across the coastal nonpoint management area are repaired, replaced or modified annually, and effluent filters installed. Within 15 years, Georgia expects that, of the roughly 117,000 septic systems in the coastal nonpoint management area, approximately 68,000 (58 percent) will have effluent filters.

Accounting for all inspection-triggers, Georgia expects to comprehensively inspect roughly 81,000 (75 percent) of its operating OSDS within 15 years, with many being inspected multiple times over this period. Georgia's robust OSDS design and siting standards have been in place for longer than most states, possibly resulting in a lower OSDS failure rate than many parts of the country. Georgia's 1940 OSDS regulations require septic systems for all residences that are not connected to sewers, as well as rigorous sizing, design and siting of septic tanks, distribution boxes and effluent drainfields. These regulations were significantly upgraded in 1969 to require protective setbacks from surface and ground water, as well as sanitary sewer hook-up of any known failing septic system where available. The State code applicable to septic systems has been upgraded several times since then. Georgia's septic control history is significant because most of the State's population growth has occurred since these robust regulations have been in place.

Beyond these comprehensive inspections, in 2010-2012 Georgia conducted visual inspections of operating OSDS across its coastal nonpoint management area that targeted the most environmentally sensitive/susceptible areas first. The trained GA DPH staff who conducted these inspections are authorized and legally required to compel repair of all dysfunctional systems. Systems found to be visually or otherwise suspect were examined more thoroughly (e.g., sub-surface) consistent with the 2007 manual. Inspections were targeted through a refined prioritization methodology, using a GIS-based OSDS pollutant susceptibility analysis to

determine areas most likely to be cumulatively impaired due to failing OSDS. The prioritization methodology relied on GIS data to consider:

- floodplain data (from FEMA);
- National Wetlands Inventory data (from U.S. Fish and Wildlife Service);
- state soil data (from USDA-NRCS);
- pollution susceptibility (from Georgia Geologic Survey);
- geology (from Georgia Department of Natural Resources (GDNR));
- ground water recharge zones (from GDNR);
- licensed shellfish beds (from GDNR);
- parcel density; and
- impaired waterways.

As a result of this prioritization analysis, all of the most critical existing individual septic systems for coastal water quality (i.e., those along the estuarine and coastal shoreline and other environmentally sensitive areas) were visually inspected at a minimum and spatially located in the State's Welstrom database as part of the coastal nonpoint program's initiative with the GA DPH, the Southern Georgia Regional Commission and UGA Marine Extension. In all, 13,998 visual inspections were performed, which represents 15.6 percent of the total number of existing OSDS in the coastal nonpoint management area.

Georgia funded this effort through a series of CWA Section 319 grants supplemented with Coastal Incentive Grant (CZMA) Section 306 funds. GA DPH continues to inspect systems and collect data for this project in the coastal nonpoint management area regardless of grant funding availability, and the project has been expanded State-wide.

In addition, Georgia is conducting significant homeowner education and outreach on proper septic system maintenance. Under Georgia regulations (GA DPH Rule 511-3-1-.03(10)), homebuilders and contractors are required to notify homebuyers about their responsibility for their OSDS, and to educate homebuyers on proper inspection and maintenance. To ensure that the homebuilder/contractor community has the tools necessary to meet this requirement, the GA DPH developed a training manual and DVD entitled, "A Homeowner's Guide to On-Site Sewage Management Systems." These educational materials are delivered to all new homebuyers in Georgia, as funding allows. Funding from a 2015 CWA Section 319 grant enabled continued dissemination of these materials, which are also available on the GA DPH website. Additionally, the Chatham County – Savannah Metropolitan Planning Commission developed a public service announcement (PSA) for local cable access television to educate residents on proper care and maintenance of OSDS. The PSA ran on local cable stations viewable to the Savannah metropolitan area in 2014 and 2015.

Through its 2014 update to the State's five-year Nonpoint Source Management Program, Georgia committed to continue to track OSDS failure rates and inspection rates over time and to expand the reach of proactive inspections of OSDS across the 11-county coastal nonpoint program management area.

With regard to replacing or upgrading OSDS near nitrogen-limited surface waters, data collected since 2000 has not revealed any nitrogen-limited surface waters. Assessments have included a nutrient sampling program that has collected data at 84 stations along the Atlantic coast since 2000 to establish baseline trends in nitrite, ammonia, total dissolved phosphorus, orthophosphate, and silicate. From 1999 to 2002, Georgia conducted an extensive research project in cooperation with North Carolina State University to sample the water column and sediments for pfiesteria or pfiesteria-like organisms in all major coastal Georgia watersheds. That study, funded by EPA, did not produce evidence of the existence of those organisms or other harmful algal species. Additionally, in cooperation with Georgia, NOAA has led an ongoing program for monitoring the occurrence of harmful algal blooms (HABs) through its Phytoplankton Monitoring Network (PMN) since 2001. Phytoplankton monitoring provides credible intelligence on the presence of HABs. Currently the PMN includes nine surface water sampling sites across coastal Georgia, all of which are monitored at least twice monthly. Although the PMN detected 16 HABs across coastal Georgia from 2004 to 2010, the network has not detected a single HAB in coastal Georgia since that time (through September 2017), indicating improving conditions and declining levels of excessive nutrients.

Georgia is developing nutrient standards in cooperation with EPA. The process for adoption of water quality criteria, with public notice of the draft standards, is expected to begin by 2019 for the State's coastal marine and estuarine waters and includes comprehensive identification of nitrogen-limited waters.

Despite the absence of indicators of eutrophication linked to OSDS, such as HABs or nitrogen-limited surface waters, Georgia is taking a proactive approach to reducing nitrogen inputs from OSDS and protecting surface waters through lot density controls. Georgia's Manual for On-Site Sewage Management Systems requires minimum lot sizes and maximum wastewater flow limits designed to reduce nitrogen inputs for properties not served by public water supplies. Specifically, the manual requires minimum lot sizes designed to ensure that nitrates in groundwater are effectively diluted to meet drinking water standards of 10 mg/L or less before encountering any surface receiving water. The manual requires that the maximum daily sewage flow for each lot or parcel of land not exceed 600 gallons per acre and that the minimum lot size be one acre when served by a non-public water supply. Using a mass-balance approach, GA DPH determined that these minimum standards should result in nitrate concentrations in groundwater of 7.35 mg/L or less. That concentration provides for a margin of safety below the drinking water standard of 10 mg/L to account for drought conditions, addition of fertilizer, and low infiltration rates.²

Georgia further provides protections to reduce the total number of potential systems discharging nitrate in environmentally sensitive areas. O.C.G.A. § 12-2-8 establishes protective setbacks and increased lot sizes for protected river corridors and water supply watersheds that reduce the potential for adverse impact due to nitrate and other OSDS-related contaminants. In addition, under Rule 391-3-16.02, GA EPD has established statewide criteria for the protection of groundwater recharge areas which mandate larger subdivision lot sizes in designated

² Source: GA DPH white paper by Chris Kumnick, "A Nitrate Mass Balance Model for Georgia, Impact of Onsite Sewage Systems on Ground Water Concentration of Nitrogen," 2012.

groundwater recharge areas (about 22 percent of the State). The criteria ensure that the amount of nitrate reaching the groundwater table is reduced in comparison to the cumulative nitrogen loadings from the maximum allowable one-acre lot density for areas served by conventional OSDS. Lot size increases mandated by this rule are as follows:

- 150 percent of the subdivision minimum lot size of GA DHR Table MT-1 if they are within a high pollution susceptibility area.
- 125 percent of the subdivision minimum lot size of GA DHR Table MT-1 if they are within a medium pollution susceptibility area.
- 110 percent of the subdivision minimum lot size of GA DHR Table MT-1 if they are within a low pollution susceptibility area.

These increases in lot size have the effect of reducing nitrogen concentrations in groundwater (from 7.35 mg/L for subdivisions served by OSDS with the maximum allowable lot density), further below the drinking water standard of 10 mg/L.

Also, within any watershed of a waterway that provides a public drinking water source, no septic tanks or drainfields are allowed within a 150-foot setback to that waterway. The setback requirement provides for a physical margin of safety to minimize nitrates from OSDS that reach these waterways.

Lastly, where environmental conditions do not allow for the proper operation of a conventional OSDS, alternative treatment systems (ATS) that reduce nitrogen must be installed. (O.C.G.A. § 31-2A-11 and GA DPH Rule 511-3-1-09). All aerobic treatment ATS approved for use in Georgia must meet a treatment standard of reducing total nitrogen by at least a 50 percent average of the influent concentration.

H. ROADS, HIGHWAYS, AND BRIDGES

2002 FINDING: The Georgia program does not include management measures for roads, highways and bridges in conformity with the 6217(g) guidance. The State needs to strengthen its description of the voluntary or incentive based programs to implement the roads, highways, and bridges management measures, particularly for local and county projects, and the description of the mechanism or process linking the implementing agency with the enforcement agency and its commitment to use the enforcement authority where necessary.

2002 CONDITION: Within two years, Georgia will include management measures in conformity with the 6217(g) guidance. Within one year, Georgia will develop a strategy to implement the management measures throughout the coastal nonpoint management area. Within one year, Georgia will submit a legal opinion and supporting documentation to demonstrate that back-up authorities can be used as enforceable policies and mechanisms to implement the roads, highways and bridges management measures throughout the coastal nonpoint management area, as described in the *Final Administrative Changes* (see Section XIV).

DECISION: Georgia has satisfied these conditions.

RATIONALE: Effective December 20, 2002, state coastal nonpoint programs need no longer include: (1) the management measure for road, highway and bridge construction projects; and (2) the management measure for construction site chemical control because the NPDES stormwater permit requirements for industrial activities on construction sites apply nationwide and therefore throughout Georgia's coastal nonpoint management area. See NOAA/EPA memorandum, *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations*. Additionally, Georgia's coastal nonpoint program need no longer include the management measure for road, highway, and bridge operation and maintenance or the management measure for runoff systems in Georgia's urbanized areas that are subject to Phase I or Phase II NPDES MS4 permits. Five of the 11 counties in Georgia's coastal nonpoint management area are currently subject to Phase I or Phase II permit requirements (Chatham, Effingham, Liberty, Long and Glynn, and the City of Richmond Hill in Bryan County).

With regard to the management measure for planning, siting and developing roads and highways and the measure for siting and designing bridges, Georgia relies on regulatory approaches. Specifically, section 12-7-6 of Georgia's Erosion and Sedimentation Act, O.C.G.A. § 12-7-6, directly addresses the management measure to plan, site and develop all state and local roads, highways and bridges to: (1) protect areas that provide important water quality benefits, or are particularly susceptible to erosion or sediment loss; (2) limit land disturbance such as clearing and grading and cut and fill to reduce erosion and sediment loss; and (3) limit disturbance of natural drainage features and vegetation. Further, the Georgia Environmental Policy Act of 1991 (GEPA), O.C.G.A. § 12-16-1, requires the evaluation and disclosure of environmental effects of proposed state-funded actions, such as the siting, planning, and developing of roads, highways and bridges. GEPA applies not only to Georgia Department of Transportation (GDOT) projects, but also to local road projects where at least 50 percent of the cost is funded by the State. In the event of a determination of a significant adverse effect, GEPA requires an evaluation of alternatives that would avoid the adverse impact, as well as any measures to minimize harm. Alignment decisions for State-funded roads consider avoidance and minimization of impairments to waters of the coastal zone such as wetlands, streams, and open waters, including waters listed as impaired under CWA Section 303(d), as well as avoidance/minimization practices such as vegetative buffers (25 feet for warm-water streams and state waters; 50 feet for cold-water trout streams). Additionally, GDOT's *Design Policy Manual* states that: "To the extent practical, roadways should be designed to fit into the surrounding landscape and environment. This approach helps to minimize potential impacts to the built and natural environment." To implement this policy, GDOT projects follow GDOT's *Environmental Procedures Manual* and project proponents conduct an avoidance analysis and include measures to minimize impact to State and Federal waters. Further measures and requirements are explained in the *GDOT Manual on Drainage Design for Highways*. Moreover, Georgia relies on its NPDES Construction Stormwater general permit to implement specific BMPs on projects located in any watershed with an impaired waterbody. Within the jurisdiction of Georgia's extensive coastal marshlands, the siting and design of roads are coordinated between GDOT and two divisions of GDNR, the GA EPD and the Coastal Resources Division (CRD). Proposed projects are reviewed in these areas to minimize their environmental impacts to marshlands. In addition to the State's Erosion and Sedimentation Act's regulatory applicability to local road and bridge projects, GDNR is partnering with GDOT to strengthen environmental protections during the planning, siting, and

design phases of local roads and bridges. All but two of the 11 coastal counties (Charlton and McIntosh counties) voluntarily follow the standards set forth in the *GDOT Manual on Drainage Design for Highways* for non-State-funded roads. State officials intend to work with all 11 counties to target outreach and to track the effectiveness of this approach, to formalize the adoption of GDOT standards, and to encourage similar actions in the two remaining counties of Charlton and McIntosh.

With regard to the management measure for operation and maintenance of roads, highways and bridges outside of MS4 areas, and the management measure to develop and implement runoff management systems to reduce polluted runoff from existing roads, highways and bridges outside of MS4 areas, Georgia relies on a mix of regulatory and voluntary approaches. All GDOT roads, highways and bridges and their rights-of-way, as well as properties and rights-of-way not owned by GDOT but within easements legally accepted by GDOT are regulated under GDOT's MS4 general permit regardless of whether the GDOT transportation modalities are inside or outside of urbanized areas. Georgia's approach is detailed in GDOT's *Stormwater System Inspection and Maintenance Manual* (April 2015), which guides GDOT's policy "to prevent or reduce stormwater pollution from its facilities." The manual "presents a program for the long-term operation and routine maintenance of post-construction structures designed for filtering and/or detention... and includes recommended inspection frequencies, checklists, and procedures." GDOT's policy is to systematically inspect all sections of these roads, highways and bridges, including their drainage features, over time and assign them the following priorities:

- Level 1, Green. Good condition. No corrective action required.
- Level 2, Yellow. Fair condition, but still functional. Follow-up inspection in 6 months (or as corrective action dictates) is recommended.
- Level 3, Red. Poor condition. Needing maintenance, repair, and/or replacement.

The GDOT manual includes appropriate inspection checklists for all GDOT property types and post-construction stormwater structures. The inspection checklists record any corrective actions needed and the GDOT manual specifies that "the District Environmental Compliance Engineers are responsible for ensuring that the necessary corrective actions are completed." The manual asserts that "GDOT will continue to perform (and will increase frequency when necessary) preventive maintenance measures to reduce sources of sediment and debris from entering stormwater systems." Finally, the manual outlines how GDOT responds to citizen complaints about drainage conditions.

For non-GDOT maintained local roads and bridges in the six counties that are not subject to Phase I or Phase II MS4 permits, Georgia relies on a coordinated set of voluntary strategies. Staff from GDOT and GDNR have committed to providing workshops for local planners, engineers and utility workers to address water quality protection during the planning, siting and design phases for local roads, highways and bridges, as well as the operation and maintenance phase. The workshops include information from the following resources:

- Stormwater 101 Program Presentation - Preserving the Quality of our Water - An overview of stormwater pollution prevention, and how communities can protect surface waters;
- GDOT's Manual on Drainage Design for Highways;

- Georgia Stormwater Management Manual;
- Georgia Coastal Stormwater Supplement; and
- Gravel Roads: Construction & Maintenance Guide (US DOT/FHWA).

GDOT has committed to providing resource materials and staff with expertise to these workshops, and has provided contact information to serve as public resource contacts to the local coastal communities.

Of particular relevance to the operation and maintenance of local roads in Georgia's coastal nonpoint management area is the abundance of unpaved local roads, which have been significant contributors to sedimentation in waterways. To encourage reductions in sediment loadings to surface waters through improved operation and maintenance of unpaved roads, Georgia developed the *Better Back Roads Field Manual* in 2009 and distributed 500 copies across its coastal nonpoint management area. Since then, Georgia conducted at least six "Better Back Roads" training workshops in this area; these workshops were attended by several hundred people. Additional workshops conducted just outside the coastal nonpoint management area have drawn participation from within it. In 2016, Georgia's coastal nonpoint program team forged a partnership with GDOT to provide additional workshops that promote the information in Georgia's *Better Back Roads Manual* as well as GDOT material adapted for local government audiences, including the *Stormwater Pollution Reporting Tool*. The tool allows for online reporting of stormwater pollution in local communities across the State. Persons who report incidents can provide details on their observations and GDOT performs follow-up as appropriate. If a reported incident takes place on roads that are not GDOT's responsibility, GDOT investigates and contacts the responsible local government entity. If local governments have obstacles addressing reported issues, the GDOT Stormwater Program is brought in for assistance. A number of the practices highlighted in Georgia's *Better Back Roads Field Manual* are already routinely used in Glynn and Wayne counties. Georgia tracks, by county, the number of BMPs featured in the manual that are installed, and tracks sediment load reductions associated with these BMPs.

With regard to runoff management systems for existing local roads, highways and bridges outside of MS4 areas, Georgia's coastal nonpoint program team has committed to implementing a strategy to: (1) identify priority pollutant reduction opportunities for existing paved and unpaved local roads and bridges; and (2) establish schedules for implementing appropriate controls. The strategy benefits from partnerships with individual coastal counties, the South Georgia Regional Commission, the Coastal Georgia Regional Commission, the Georgia Forestry Commission (GFC) and the Georgia Soil and Water Conservation Commission (GSWCC). To build on the work of GFC and GSWCC on private forestry and agricultural lands, Georgia's coastal nonpoint program team is identifying and targeting high priority needs for reducing pollution from local public roads. The strategy works through these partners to identify BMPs from the *Better Back Roads Manual* and GDOT, conduct demonstration projects, and utilize GA EPD's *Watershed Prioritization Model*. As an example, GA EPD and Brantley County have partnered on two important road projects to reduce nonpoint source pollution to the coastal area's creeks and rivers. The goal of the first project is to control erosion along a section of Little Buffalo Creek Road and reduce the impact of sedimentation on Buffalo Creek and the Satilla

River. The second project remedies an erosion problem on an existing dirt road prone to wash-outs during rainfall events by creating a low stream crossing that can withstand eddying of river waters during annual flooding.

Additionally, Georgia is implementing the *Coastal Georgia Better Back Roads Sediment Reduction Project* to develop and install at least six BMPs to reduce road sediments and enhance surface water quality across a 24-county coastal region, and to conduct related outreach. The primary target area for these six BMPs is the 11-county coastal nonpoint management area; the secondary target area is the adjacent 13-county coastal area. The educational activities include coordination with elected officials, residents and local watershed groups to conduct a field day and provide educational materials and outreach.

In order to reach communities across the six counties in the State's coastal nonpoint management area not subject to NPDES MS4 regulations, Georgia's coastal nonpoint program team is working with the Association of County Commissioners of Georgia and the Georgia Municipal Association to better target local coastal decision-makers and promote voluntary implementation of the roads, highways and bridges management measures for operation and maintenance and for runoff control. Georgia's strategy to reach communities across the six-county area is to target one county each year, and rotate through all six counties at least twice over the 15-year implementation period. Georgia would monitor the strategy's success and track the number of BMPs reported by each county participating in the training seminars, as well as load reductions for sediments achieved in the areas where BMPs are installed. Georgia also plans to develop and encourage adoption of a model resolution for local coastal communities to further implement the best practices for operation and maintenance of local roads featured in the *Better Back Roads Manual* and GDOT practices. Other elements of Georgia's strategy include:

- creating a point of contact at the state level and a web page with all applicable resources;
- within one year, beginning to inventory locations in which the local road network contributes NPS pollution;
- creating a checklist/guidance for use by coastal county staff to assist with tracking; and
- creating and publishing a "frequently asked questions" document, which highlights the benefits of local road and bridge operations and maintenance for pollution reduction.

The initial focus of this 15-year strategy is Brantley County, which has the largest network of unpaved roads in the coastal nonpoint management area.

To the extent that Georgia is relying on voluntary approaches to implement various roads, highways, and bridges management measures, State law provides back-up authority with enforceable policies and mechanisms, which the State has committed to implement. Georgia provided a legal opinion explaining how the Water Quality Control Act (O.C.G.A. § 12-5-20, *et seq.*) provides adequate back-up authority to ensure the implementation of the 6217(g) management measures, as needed. This legal opinion includes summaries of the methods the

State is using to track and evaluate those voluntary programs and describes the State's commitment to implement them with various appropriate partners.

VI. HYDROMODIFICATION

A. (1) PHYSICAL AND CHEMICAL CHARACTERISTICS OF SURFACE WATERS; AND (2) INSTREAM AND RIPARIAN HABITAT RESTORATION

2002 FINDING: The Georgia program includes management measures in conformity with the 6217 (g) guidance, except the program does not include development of an operation and maintenance plan for existing modified channels to improve physical and chemical characteristics of surface waters and identify opportunities to restore habitat in those channels. The program includes enforceable policies and mechanisms that ensure implementation of the measures throughout the 6217 management area, except for activities exempted by the Coastal Marshlands Protection Act.

2002 CONDITION: Within two years, Georgia will include measures that are in conformity with the 6217(g) guidance for hydromodification. Within one year, Georgia will develop a strategy to implement the management measures throughout the coastal nonpoint management area. Within one year, Georgia will submit a legal opinion and supporting documentation to demonstrate that back-up authorities can be used as enforceable policies and mechanisms to implement the hydromodification management measures for those activities exempted by the Coastal Marshland Protection Act, as described in the *Final Administrative Changes* (see Section XIV).

DECISION: Georgia has satisfied this condition.

RATIONALE: Both of these measures contain three elements. The first two elements are to evaluate the potential effects of proposed channelization and channel modification projects and to plan and design them to reduce undesirable impacts. The Federal agencies approved these elements for both measures in our 2002 findings for Georgia's coastal nonpoint program. The third element of these two management measures is to develop an operation and maintenance program for existing modified channels that includes identification and implementation of opportunities to improve and restore the channels, both for physical and chemical characteristics of surface waters in those channels and for opportunities to restore instream and riparian habitat.

Consistent with the 6217(g) guidance description of the third element of these two measures, Georgia must develop an operation and maintenance program for existing modified channels, including identifying and implementing opportunities to improve and restore the channels. To address this component of both measures, as well as the hydromodification management measures for dams and streambank and shoreline erosion (described in the following two sections), the State has developed a plan to systematically track and improve the condition of modified channels, dams, eroding streambanks and shorelines in need of restoration or stabilization, particularly in priority watersheds. As part of its program, Georgia is developing a GIS inventory and database of canals, dams and eroding streambanks and shorelines in the 11-

county coastal nonpoint management area. Georgia expects to complete the initial database and inventory of canals and dams in 2019. The State then plans to assess these inventoried areas and their associated impacts to water quality or instream and riparian habitat, as well as the potential for improvement. With the assessment, Georgia has committed to develop a list by 2021 of high-priority sites across these counties to be targeted for restoration or stabilization, and to making on-the-ground improvements to these priority sites. The State intends to cycle the implementation of high-priority hydromodification restoration or stabilization projects by county each year such that, after 11 years, prioritized projects across each of the 11 counties in Georgia's coastal nonpoint management area are completed.

The State intends to use CWA Section 319 grant funds and Coastal Incentive Grant (CZMA) funds to support each phase of this program and track restoration activities through its CWA Section 319 annual reports. Georgia's Clean Water State Revolving Fund (CWSRF) and private grants may also be used to implement this program.

Moreover, Georgia continues to engage key local stakeholders on the proper operation and maintenance of canals through a series of training workshops based on two voluntary manuals: UGA's *Hydromodification Best Management Practices Manual for Coastal Georgia* (Sept. 2009); and Chatham County's *Best Management Practices for Canal Greenway Maintenance* (Nov. 2015). UGA's 2009 manual describes potential water quality impacts from hydromodification projects and presents the best practices for both management measures discussed in this section. The manual was written to help key audiences understand when and how to apply particular practices and includes illustrated fact sheets on key practices.

The most common types of hydromodification projects in coastal Georgia are canals and drainage ditches. Chapter 2 of Georgia's 2009 manual includes information on the operation and maintenance of existing canals and drainage ditches to minimize impacts on surface water quality and instream and riparian habitat. It also describes opportunities for restoring instream and riparian habitat along modified channels and identifies specific timeframes for maintenance and restoration of both existing channels and recently constructed channelization projects. The manual describes various restoration and maintenance practices consistent with the 6217(g) guidance to implement hydromodification measures, as necessary, through an ongoing operation and maintenance program.

Georgia tracks the number and location of training sessions it holds for the *Hydromodification Best Practices Manual* and tracks and evaluates implementation of improvements to canals and modified channels through its CWA Section 319 annual reports. Georgia combines this implementation data with data from its statewide water quality monitoring system to provide an integrated assessment of its voluntary approach that will help the State determine how and where to target its limited resources in an efficient and effective manner to address channel and channelization issues within its coastal nonpoint management area.

B. DAMS

2002 FINDING: Georgia's program includes management measures for dams in conformity with the 6217(g) guidance, except it does not include management measures to apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters or management measures for protection of surface water quality and instream and riparian habitat.

2002 CONDITION: Within two years, Georgia will include measures that are in conformity with the 6217(g) guidance.

DECISION: Georgia has satisfied this condition.

RATIONALE: In our 2002 findings document, the Federal agencies found that Georgia's coastal nonpoint program includes management measures for dams in conformity with the 6217(g) guidance, except it did not include:

- 1) management measures to apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters; or
- 2) management measures for protection of surface water quality and instream and riparian habitat.

Since the initial publication of the 6217(g) guidance, aspects of the management measure applicable for chemical and pollutant control for dams have changed in applicability. With regard to applying nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters (an element of the management measure for chemical and pollutant control for dams), state coastal nonpoint programs are no longer required to include this measure in their coastal nonpoint programs because such pollution is subject to NPDES permits for stormwater associated with industrial activity, and/or for MS4s. See NOAA/EPA memorandum, *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations*. Notwithstanding the changes afforded by the Federal agencies' 2002 policy clarification, Georgia directly addresses proper nutrient application on dam features in Section 3 of its 2009 *Hydromodification Best Management Practices Manual for Coastal Georgia*, which includes best management practices to ensure nutrients and pesticides are applied in ways that protect surface water quality, consistent with the 6217(g) guidance.

Georgia has established measures related to dams and impoundments necessary to protect surface water quality, and instream and riparian habitat through its: (1) hydromodification tracking and maintenance work program; (2) the *Hydromodification Best Management Practices Manual for Coastal Georgia*; and (3) associated training and outreach efforts (discussed in the preceding section). The management measure requires states to develop and implement a program to manage the operation of dams in coastal areas that includes an assessment of: (1) surface water quality and instream and riparian habitat and potential for improvement; and (2) significant nonpoint source pollution problems that result from excessive surface water withdrawals. Georgia's program not only provides these assessments based on a full inventory of applicable dams, but also commits to systematically implementing the necessary improvements

with identified funding sources across the 11-county coastal nonpoint management area over a 15-year timetable.

Georgia tracks the number and location of training sessions it holds for the *Hydromodification Best Practices Manual* and tracks and evaluates implementation of dam improvements through its CWA Section 319 annual reports. Georgia combines this implementation data with data from its statewide water quality monitoring system to provide an integrated assessment of its voluntary approach that will help the State determine how and where to target its limited resources in an effective manner to address dam issues within its coastal nonpoint management area.

C. STREAMBANK AND SHORELINE EROSION

2002 FINDING: Georgia's program does not include management measures for streambank and shoreline erosion in conformity with the 6217(g) guidance.

2002 CONDITION: Within two years, Georgia will include measures that are in conformity with the 6217(g) guidance. Within one year, Georgia will develop a strategy to implement the management measures throughout the coastal nonpoint management area.

DECISION: Georgia has satisfied this condition.

RATIONALE: As with the other hydromodification management measures, Georgia has developed a program that involves completing an inventory and database of hydromodification features, including eroding streambanks and shorelines; then assessing their coastal nonpoint pollution impacts; and lastly making improvements to sites identified as high priority for restoration or stabilization. Georgia has already completed GIS inventories of eroding streambanks and shorelines in the six ocean-front counties and expects to finish the remaining five inland counties in 2020 or as funding is made available.

In addition, Georgia's voluntary 2009 hydromodification BMP manual, discussed in the preceding two sections, provides guidance to address the management measure for eroding streambanks and shorelines. Chapter 1 of the manual describes practices for stabilizing eroding streambanks and shorelines, encourages vegetative methods over structural methods, when feasible, and lists preferred types of native vegetation for coastal Georgia. The chapter also promotes the protection of existing shoreline features that have the potential to reduce nonpoint source pollution through establishing riparian buffers.

Georgia provided a legal opinion asserting that the State has adequate back-up authority to ensure implementation of the hydromodification measurement measures, including the management measure for eroding streambanks and shorelines. Georgia is committed to using its existing enforcement authorities to achieve implementation of the management measures, where necessary. GA EPD serves as both the implementing and enforcing agency for these measures. Georgia tracks the number and location of training sessions it holds for the *Hydromodification Best Practices Manual* and tracks and evaluates implementation of improvements to streambank

and shoreline erosion through its CWA Section 319 annual reports. Georgia combines these implementation data with data from its statewide water quality monitoring system to provide an integrated assessment of its voluntary approach. This will help the State determine how and where to target its limited resources in an efficient and effective manner to address streambank and shoreline issues within its coastal nonpoint management area.

XIII. MONITORING

2002 FINDING: Georgia'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.

2002 CONDITION: Within one year, Georgia 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, particularly with regard to the urban and hydromodification management measures.

DECISION: Georgia has satisfied this condition.

RATIONALE: Georgia implements a coordinated multi-faceted approach to assess over time the success of the management measures in reducing pollution loads and improving water quality. In 2002, the Federal agencies approved a monitoring and tracking system for Georgia's coastal nonpoint program for the following management measure categories: agriculture, forestry, marinas and recreational boating, and wetlands. Since then, Georgia has developed adequate systems for monitoring and tracking the implementation of the management measures for the urban and hydromodification categories. These systems are described in the rationales specific to those management measures. Additionally, Georgia:

- conducts BMP demonstration projects and effectiveness monitoring;
- tracks implementation of Watershed Protection Plans for regulated local governments;
- tracks CWA Section 401 Certifications through its permit tracking database; and
- conducts long-term ambient water quality monitoring.

Moreover, Georgia has committed to using its CWA Section 319 annual reports to report on progress made in implementing priority management measures across its coastal nonpoint management area. Georgia's coastal nonpoint program is coordinated with the statewide monitoring and tracking system to generate a comprehensive, coordinated strategy for monitoring and tracking.