

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

**FOREWORD**

This document contains the basis for the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency's (EPA) decision to fully approve the Territory of Guam's Coastal Nonpoint Pollution Control Program (coastal nonpoint program). It discusses how the State has met each of the conditions of approval placed on the coastal nonpoint program submitted by Guam pursuant to Section 6217(a) of the Coastal Zone Act Reauthorization Amendments of 1990.

The Findings for Guam's coastal nonpoint program were issued on October 3, 1997. Since that time, Guam has undertaken a number of actions to address conditions of approval on its coastal nonpoint program. Based on those actions and on materials the Territory has provided to document how the conditions have been met, NOAA and EPA find that Guam has satisfied all conditions of approval.

This document is organized in the same fashion as the Findings for Guam's coastal nonpoint program. Where the original Findings included a condition, this document repeats the condition, and discusses how the condition has been satisfied. For further understanding of terms in this document and the basis for these decisions, the reader is referred 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 and EPA, January 1993); *Flexibility for State Coastal Nonpoint Programs* (NOAA and EPA, March 1995); and *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance for Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990* (NOAA and EPA, October 1998).

**FINAL APPROVAL DECISION**

NOAA and EPA find that the Territory of Guam has satisfied all conditions placed on approval of the Guam coastal nonpoint pollution control program submitted to NOAA and EPA pursuant to Section 6217(a) of the Coastal Zone Act Reauthorization of 1990. Therefore, Guam's coastal nonpoint program meets all program requirements and is hereby fully approved, constituting a final approval decision for the program.

Please note that the approval decision made for the Guam coastal nonpoint program does not relieve the Territory of any requirements under the Endangered Species Act.

**AGRICULTURE**

**CONDITION:** Within one year, Guam will develop a strategy (in accordance with Section XII, page 12) to implement the agricultural management measures throughout the 6217 management area.

**DECISION:** Guam has satisfied this condition.

**RATIONALE:** During the conditional approval findings for Guam’s Coastal Nonpoint Program, NOAA and EPA found that Guam had programs in place to implement all agriculture management measures except the grazing measure. Guam provided sufficient justification to receive an exclusion for the grazing management measure. At the time of conditional approval, however, Guam had not demonstrated it had a strategy to implement the agriculture management measures throughout the Territory. Guam’s Attorney General signed a legal opinion attesting that the Water Pollution Control Act (10 GCA 47) provides adequate back-up authority, as needed, to ensure the agriculture management measures are implemented. If the current programs are not adequately implementing the (g) measures, the Guam Environmental Protection Agency (GEPA) has the authority to require additional actions be taken and assess fines as needed. Guam’s monitoring strategy describes how it monitors and tracks implementation of these measures by tracking BMP usage on agricultural land and conducting routine ambient water quality monitoring. Therefore, per the 1998 *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance*, NOAA and EPA now find that Guam has satisfied this condition.

Although Guam has satisfied this condition through its legal opinion, Guam has also demonstrated it has greatly expanded its direct enforcement authority for the agriculture management measures through its Environmental Protection Plan (EPP) and Comprehensive Watershed Planning Process (CWPP). NOAA and EPA applaud Guam’s accomplishments in this area as these two programs have the ability to provide direct enforcement for all agriculture management measures.

First, GEPA requires Environmental Protection Plans (EPPs) for many earth-moving activities (GSESCR Sect. 10103(c)(5)(d)). EPPs must contain best management practices consistent with the 6217 (g) guidance to reduce nonpoint source pollution throughout the life of the project (including post-land clearing). Section 7.2(6) specifically reiterates that wastewater runoff from combined animal feeding operations must to controlled in accordance with the (g) guidance. Agriculture-related EPPs are also to include nutrient management plans, erosion and sedimentation control measures, pesticide management plans and irrigation water management plans, as appropriate. In addition to complying with 6217(g) guidance, Plans must be consistent with the Natural Resource Conservation Service’s Field Office Technical Guidance when agricultural activities involve fertilizers, nutrients and/or pesticides during “post-construction performance.”

The GSESCR allows that some activities, such as field plowing, normal tilling operations, or land clearing for agricultural purposes, may be exempt from an EPP. However, GEPA only grants an exemption “if these activities or operations do not cause sediment and runoff water to move beyond the edge of the farm boundaries and degrade the water quality of the receiving water bodies” (Sect. 10101(D)(9)), in which case, the intent of the (g) measures will be satisfied.

Second, Guam relies on its Comprehensive Watershed Planning Process (CWPP) to address the agriculture management measures in existing agricultural areas. In March 2004, the governor of Guam signed a revised Executive Order (No. 2004-04), establishing the Watershed Planning Committee. The E.O. charges the Committee to develop a CWPP for developing and implementing watershed management plans throughout Guam’s watersheds. These watershed plans must identify existing sources of nonpoint source pollution, including agricultural sources, and identify and prioritize opportunities to reduce these sources of pollution. The E.O. also requires all Guam agencies to carry out their duties in compliance with the 6217 (g) guidance, ensuring that the CWPP will be developed and implemented consistent with the 6217 (g) management measures for agriculture.

Guam is beginning to implement the CWPP in the Ugum and Northern priority watersheds. As Guam develops these watershed plans, NOAA and EPA strongly encourage Guam to adhere to the E.O. and ensure that practices addressing the 6217 (g) agriculture measures are incorporated into the plans, as appropriate.

## **URBAN**

### **A. NEW DEVELOPMENT and SITE DEVELOPMENT**

**CONDITION:** Within three years, Guam will include in its program management measures in conformity with the 6217(g) guidance for the new development and site development management measures. Within one year, Guam will develop a strategy (in accordance with Section XII, page 12) to implement the new development and site development management measures throughout the 6217 management area.

**DECISION:** Guam has satisfied these conditions.

**RATIONALE:** Guam has satisfied the site development measure through its Soil Erosion and Sediment Control Regulations (GSESCR), Environmental Protection Plan (EPP) Guidance, Erosion Control BMP Manual and Storm Drainage Manual. Generally, the GSESCR states that one of the purposes of the regulations is to control nonpoint source pollution consistent with the latest “Guam NPS Program” and “the comprehensive approach set forth in Section 6217 of the Coastal Zone Reauthorization Amendments . . . and the ‘Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters’ . . . issued under the authorization of Section 6217(g).” Specifically, the GSESCR requires erosion and sediment control plans prepared by an engineer be submitted to GEPA prior to any soil disturbance activity (Sect. 10103(c)(5)(c)(ii)). For developments exceeding 5,000 square feet or with a cut or fill greater than five feet high, stormwater runoff plans must also be submitted. Both of these plans must show how erosion and stormwater runoff will be controlled during and after

construction. Erosion and Sediment Control Plans must keep soil disturbance to a minimum (Sect. 10105(A)(2)), maintain natural contours and drainage patterns (Sect. 10105(B)(3)), promptly revegetate disturbed sites (Sect. 10105(B)(4)(c)), avoid areas susceptible to erosion (Sect. 10105(B)(5)(b)), and maintain natural vegetation (Sect. 10105(B)(11)(b)).

GSESCR Sect. 10103(c)(5)(d) states that GEPA may also require Environmental Protection Plans (EPPs) for earth-moving activities in addition to Erosion and Sediment Control Plans. Like the GSESCR, the EPP Guidance clearly states that the purpose of the EPP is to implement practices that are consistent with the 6217(g) guidance. EPPs must contain appropriate best management practices to reduce nonpoint source pollution from the given activity both during construction and throughout the life of the project. Consistent with the new and site development measures, the EPP Guidance requires that EPP Plans must be developed to limit erosion and “retain sediment on-site during and after construction” (Section 5.4). The Guidance also states that sediment must be contained in sediment basins and that the basins must be designed to hold runoff from a local 20 year storm event (Section 6.6). As the new Stormwater Management Manual notes, per NPDES Phase II requirements, any disturbance activity one acre or more is required to develop an EPP.

Guam has updated its *Guidance for Best Management Practices in the Preparation of Soil Erosion and Sediment Control Plan* and the *Storm Drainage Manual* into a combined *Stormwater Management Manual*. The new manual is fully consistent with the (g) guidance for new and site development. For example, best practices included in the manual include reducing impervious surfaces, maintaining natural drainage patterns, preserving vegetation, installing stormwater control structures to control 80% of the total suspended solids, and maintaining post-development runoff rates equal to pre-development levels. NOAA and EPA applaud Guam for developing a robust new Stormwater Management Manual that incorporates the 6217 (g) guidance.

Section 10103C5(c)i requires that Erosion and Sediment Control and Storm Water Runoff Drainage Systems Plans "be prepared and signed by an engineer in accordance with these regulations, and the best management practices (BMP) guidance manual or other application of BMPs". The latest version of the Erosion and Sediment Manual is the new Guam Stormwater Management Manual. It is Guam's policy to require all new development to adhere to the guidance specified in its new Stormwater Manual. Further, Guam is on track to officially adopt the new Stormwater Manual and to require all developments larger than one acre to adhere to this manual.

In addition to the GSESCR, which provides enforceable mechanisms to implement portions of the new and site development measures, Guam's Attorney General also signed a legal opinion attesting that the Water Pollution Control Act (10 GCA 47) provides adequate back-up authority, as needed, to ensure the new and site development measures are implemented. If the current programs are not adequately implementing the (g) measures, GEPA has the authority to require additional actions be taken and assess fines as needed. Guam's monitoring strategy describes how it will monitor implementation of these measures through site visits and ambient water quality monitoring.

**B. WATERSHED PROTECTION and EXISTING DEVELOPMENT**

**CONDITION:** Within three years, Guam will include in its program management measures in conformity with the 6217(g) guidance for the watershed protection and existing development management measures. Within one year, Guam will develop a strategy (in accordance with Section XII, page 12) to ensure implementation of the watershed protection and existing development management measures throughout the 6217 management area.

**DECISION:** Guam has satisfied these conditions.

**RATIONALE:** In March 2004, the governor of Guam signed a revised Executive Order (No. 2004-04), establishing the Watershed Planning Committee comprised of all relevant Territory agencies. The E.O. charges the Committee to develop a comprehensive watershed planning process (CWPP) for developing and implementing watershed management plans for Guam's watersheds. This CWPP must be developed and implemented consistent with the 6217 (g) management measures (including watershed protection and existing development). The E.O. also requires all Guam agencies to carry out their duties in compliance with the 6217 (g) guidance.

NOAA and EPA applaud Guam's efforts in developing its CWPP to date. The Watershed Planning Committee has developed a comprehensive watershed planning strategy that calls for a five-step planning process to develop watershed plans. In 2005, Guam further improved its watershed planning process by developing more detailed guidance/model scope of work for developing watershed plans. The model scope of work specifically references the 6217 (g) guidance. Not only does the guidance ensure that actions addressing the watershed protection and existing development measures will be incorporated into plans as they are developed, but also ensures that other 6217 (g) measures will be incorporated into the plans as appropriate. The Territory has also developed a timeline for developing and implementing the plans throughout its 6217 boundary over the next 15 years.

Guam has begun work on developing a watershed plan for the Ugum watershed and has committed to allocating \$30,000 of its Coastal Nonpoint Program funding and \$70,000 of its EPA 319 funding each year to continue implementing its watershed planning process. In addition, Guam is in the final stages of hiring a Program Coordinator to oversee watershed and nonpoint control matters for Guam. NOAA and EPA encourage Guam to continue to move forward with its watershed planning process to ensure applicable 6217 (g) measures are addressed. The new watershed coordinator will play a valuable role in coordinating the development and implementation of the watershed plans.

Because Guam now has an E.O. in place requiring implementation of these management measures, the condition about developing a "strategy" is no longer applicable. The E.O. is Guam's enforceable authority for the watershed protection and existing development measures.

**C. CONSTRUCTION SITE EROSION AND SEDIMENT and CHEMICAL CONTROL**

**CONDITION:** Within three years, Guam will include in its program management measures in conformity with the 6217(g) guidance for construction site chemical control.

**DECISION:** Guam has satisfied this condition.

**RATIONALE:** In their December 2002 Policy Memo, NOAA and EPA agreed to defer to EPA's National Pollution Discharge Elimination System (NPDES) Phase I and II Storm Water Regulations for the construction site erosion and sediment control and construction site chemical control management measures. According to Section 6217 program guidance, once a source is covered by a NPDES permit, 6217 requirements have been satisfied. Therefore, by implementing the Phase I & II program, Guam has met all conditions for construction site erosion and sediment control and construction site chemical control.

#### **D. ROADS, HIGHWAYS, AND BRIDGES**

**CONDITION:** Within three years, Guam will include in its program management measures in conformity with the 6217(g) guidance for roads, highways, and bridges, and enforceable policies and mechanisms to ensure implementation of these measures throughout the 6217 management area.

**DECISION:** Guam has satisfied these conditions.

**RATIONALE:** Guam has satisfied the planning, siting and design management measure and planning and siting aspects of the bridge management measure through its Soil Erosion and Sediment Control Regulations (GSESCR) and Environmental Protection Plan (EPP) Guidance. The GSESCR states that one of the purposes of the regulations is to control nonpoint source pollution consistent with the latest "Guam NPS Program" and "the comprehensive approach set forth in Section 6217 of the Coastal Zone Reauthorization Amendments . . . and the 'Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters' . . . issued under the authorization of Section 6217(g)." Further, the GSESCR requires that erosion and sediment control plans, prepared by an engineer, be submitted to GEPA prior to any soil disturbance activity (Sect. 10103(c)(5)(c)(ii)). For developments exceeding 5,000 square feet or with a cut or fill greater than five feet high, stormwater runoff plans must also be submitted. Both these plans must show how erosion and stormwater runoff will be controlled during and after construction. Erosion and Sediment Control Plans must minimize soil disturbance (Sect. 10105(A)(2)), maintain natural contours and drainage patterns (Sect. 10105(B)(3)), promptly revegetate disturbed sites (Sect. 10105(B)(4)(c)), avoid areas susceptible to erosion (Sect. 10105(B)(5)(b)), and maintain natural vegetation (Sect. 10105(B)(11)(b)). GSESCR Sect. 10103(C)(7) also requires an Environmental Impact Assessment be developed for all projects located within environmentally sensitive areas (streams, rivers, shorelines, wetlands and critical habitat).

Environmental Protection Plans (EPPs) are also required for any earth-moving activity, including any construction, operation or maintenance activity for roads, highways and bridges. Like the GSESCR, the EPP guidance clearly states its purpose is to implement practices that are

consistent with the 6217(g) guidance. Section 6.0 specifically states that construction, operation and maintenance activities for roads, highways and bridges must conform to the (g) guidance.

Pursuant to the December 2002 Policy Memo, NOAA and EPA agree to defer to EPA's National Pollution Discharge Elimination System (NPDES) Phase I and II Storm Water Regulations for the roads, highways and bridges construction site erosion and sediment control and construction site chemical control management measures. According to Section 6217 program guidance, once a source is covered by a NPDES permit, 6217 requirements are satisfied. Therefore, by implementing the Phase I & II stormwater permit program, Guam has met all conditions for the roads, highways, and bridges construction site erosion and sediment control and construction site chemical control measures.

Guam addresses the roads and highways operation and maintenance measure and the maintenance element of the bridge management measure through a variety of mechanisms including its pesticide regulations, EPPs and the Comprehensive Watershed Planning Process (CWPP). For example, Guam's Pesticide Regulations (Sect. 18.2.2(3)(a-d) and (7)(c)) establish competency provisions for commercial pesticide applicators to ensure pesticides are applied in the least environmentally damaging method as possible. Operation and maintenance activities that involve earth-moving must develop EPPs consistent with the 6217 (g) guidance.

The CWPP allows Guam to fully implement the operation and maintenance measures as well as the measure for stormwater runoff control. Guam added the Department of Public Works (DPW), the Territory agency responsible for maintaining roads and bridges, to the list of member agencies that must participate in the Watershed Planning Committee when it revised the Watershed Planning Executive Order (E.O. 2004-04). According to the E.O., all agencies, including DPW, must conduct their activities consistent with the 6217 (g) guidance. The E.O. also calls for the Watershed Planning Committee to develop a comprehensive watershed planning process and watershed management plans for Guam's watersheds. A major focus of the CPWW is to identify and reduce sources of nonpoint source pollution, including urban sources from roadways, in accordance with the 6217 (g) measures. Guam has developed detailed guidance/model scope of work for developing watershed plans. The guidance stipulates that the watershed plans include nonpoint source control strategies to mitigate impacts from existing road runoff and regularly maintain roadways and their associated runoff control structures of road runoff when appropriate (i.e., runoff from roadways is identified as a significant pollution source). The Territory has also developed a timeline for developing and implementing watershed plans throughout Guam over the next 15 years.

Guam has begun work on developing a watershed plan for the Ugum watershed and has committed to allocating \$30,000 of its Coastal Nonpoint Program funding and \$70,000 of its EPA 319 funding each year to continue implementing its watershed planning process. In addition, Guam is in the final stages of hiring a Program Coordinator to oversee watershed and nonpoint control matters for Guam. NOAA and EPA encourage Guam to continue to move forward with its watershed planning process to ensure applicable 6217 (g) measures are addressed. The new watershed coordinator will play a valuable role in coordinating the development and implementation of watershed plans.

In addition, Guam has recently completed several road improvement projects that demonstrate how it identifies and implements improvements to stormwater control systems. For example, the Tumon Bay highway project was designed to infiltrate all runoff from the project area.

### **MARINAS AND RECREATIONAL BOATING**

**CONDITION:** Within two years, Guam will include in its program management measures in conformity with the 6217(g) guidance for marinas and recreational boating, and enforceable policies and mechanisms to ensure implementation throughout the 6217 management area.

**DECISION:** Guam has satisfied all these conditions.

**RATIONALE:** EPA and NOAA have determined that Guam is exempted from the marina siting and design management measures for marina flushing, water quality assessment, habitat assessment, shoreline stabilization, fueling station design, stormwater runoff, and sewage facility management. This determination is based on EPA and NOAA review of Guam's revised coastal nonpoint pollution management program and assessment of existing and projected need for new marinas on Guam. This assessment demonstrated that Guam's existing and for new marinas have adequate boat slip vacancies to accommodate existing needs and anticipated growth for the foreseeable future and there is unlikely to be either construction of a new marina or an expansion of any of the existing marinas in Guam. Although Guam's economy is tourism-based there has been no significant tourism demand toward recreational boating, sport fishing, or yachting, and thus no demand for additional new boat slips or a new marina. Therefore, Guam has no plans in the immediate or foreseeable future for any improvements to existing marinas or construction of a new marina.

In the unlikely event that a new marina or an expansion of an existing marina is contemplated in the future, Guam has existing authorities such as the Guam Water Quality Standards, Water Pollution Act, Guam Soil Erosion and Sediment Control Regulations, and Guam Territorial Seashore Protection Act, requiring an extensive permitting process to review a project as a major siting and can ensure the implementation of appropriate management measures to protect water quality in Guam. To demonstrate this, Guam's Attorney General submitted a legal opinion stating that Guam has adequate legal authority to ensure implementation of the 6217 (g) measures, including the marina siting and design measures, when necessary.

Guam has satisfied the marina and boat operation and maintenance management measures for solid waste management, fish waste management, liquid material management, petroleum control management, boat cleaning management, and maintenance of sewage facilities primarily through its Guam Water Quality Standards (GWQS) and Marina Rules and Regulations of the Port Authority of Guam (Marina Rules and Regulations). Generally, the GWQS provide for control of solid waste or other deleterious materials that would directly or indirectly enter a water of Guam (Section 5104.G.5.); storage of petroleum products or hazardous materials to protect Guam's waters from potential threat from oil or hazardous materials discharge (Section 5104.H.); and require all waters to be free from substances that are toxic or harmful to aquatic life or cause visible floating materials, debris, oils, discharge of any pollutant in toxic amounts, etc. Guam has completed the installation of sewage pump-out facilities at its two major public



marinas. Boat cleaning at marinas is limited and maintenance and repair work in the water is prohibited by the Port Authority of Guam.

In addition, Guam's Marina Rules and Regulations address vessel, property or facility cleanliness and sanitation (Section 4.02); management, control and disposal of shipboard solid waste (Section 4.03); and disposal of any litter, sewage, or other gaseous, liquid or solid materials into the water (Section 4.06 and 4.07).

Guam's Recreational Water Use Management Plan (RWUMP) establishes rules to regulate uses of recreational and commercial watercraft within the waters of Guam. For example, the RWUMP restricts the operation of dinner cruises and seaplanes within sensitive reef areas. It also establishes speed restrictions for watercraft use on rivers and lakes. These restrictions help to protect environmentally sensitive areas from boating-induced erosion or harm and are consistent with the (g) guidance for boat operation and management.

In addition to these regulatory components, Guam has laid out a process and timeline for developing a comprehensive clean marina program. The Clean Marina Advisory Group has identified and is beginning to implement priority actions to reduce nonpoint source pollution from Guam's marinas, including installing hazardous waste storage containers and wash down facilities at the two most heavily used marinas. The Advisory Group is also improving public outreach and education by installing educational signage about clean marina best management practices (BMPs) at the marinas and working closely with the Port Authority of Guam as it updates its marina rules and regulations to incorporate additional clean marina BMPs. NOAA and EPA encourage Guam to move forward with these projects and ensure that they continue to be consistent with the 6217 (g) measures.

### **HYDROMODIFICATION**

**CONDITION:** Within two years, Guam will include in its program management measures in conformity with the 6217(g) guidance for channelization and channel modification, pollutant and chemical control at dams, protection of water quality and habitat from the effects of dams, and shorelines and streambanks. Within one year, Guam will develop a strategy (in accordance with section XII, page 12) to implement the hydromodification management measures throughout the 6217 management area.

**DECISION:** Guam has satisfied all these conditions.

### **RATIONALE:**

#### **Channelization--Physical and Chemical Characteristics of Surface Water Quality and Instream and Riparian Habitat Restoration**

Guam's Soil Erosion and Sediment Control Regulations (GSESCR) address the first two elements of the channelization and channel modification measures. Under the GSESCR, permits and sediment control plans are required for all construction activities, including channel modification, that result in soil disturbance ((Sect. 10103(c)(5)(c)(ii)). Sediment control plans must minimize sediment disturbance, maintain natural drainage features and retain natural

vegetation to the maximum extent possible to ensure channel modifications are planned and designed to limit impacts to water quality and instream and riparian habitat. In addition, any project located in an environmentally sensitive area, including a river or stream must submit an environmental impact assessment (GSESCR 10103(C)(7)).

Guam has also updated its *Guidance for Best Management Practices in the Preparation of Soil Erosion and Sediment Control Plan* and the *Storm Drainage Manual* into a combined *Stormwater Management Manual*. The new manual includes best management practices for channel protection. NOAA and EPA applaud Guam for developing a robust new Stormwater Management Manual that incorporates the 6217 (g) guidance.

To address the third element of the channelization management measures (develop an operation and maintenance program with specific timetables for existing modified channels that includes identification and implementation of opportunities to improve surface water quality and instream and riparian habitat), Guam's Nonpoint Source Management Plan describes how the Territory Department of Public Works (DPW) is mandated to maintain stormwater conveyance systems. The DPW maintenance activities include channel inspections (performed as needed but primarily before the wet season and before and after every major storm event) and channel debris removal.

Guam's Comprehensive Watershed Planning Process (CWPP) further supports the channelization measures. Guam has developed detailed guidance/model scope of work for developing watershed plans. The guidance stipulates that the watershed plans include nonpoint source control strategies to prevent and mitigate impacts from modified channels as appropriate (i.e., when modified channels are identified as a significant pollution source). The Territory has also developed a timeline for developing and implementing watershed plans throughout its 6217 boundary over the next 15 years and has committed to allocating \$100,000 a year to develop and implement these watershed plans. NOAA and EPA encourage Guam to continue to implement this CWPP and develop watershed plans consistent with the (g) guidance.

#### Dams--Chemical and Pollutant Control, Protection of Surface Water Quality and Instream and Riparian Habitat.

EPA and NOAA have determined that Guam is exempt from the dam management measures for Chemical and Pollutant Control, Protection of Surface Water Quality and Instream and Riparian Habitat. This determination is based on EPA and NOAA review of Guam's revised coastal nonpoint pollution management program and assessment of the existing and future likelihood of new dams in Guam. Guam currently has only one dam, and it falls under the purview of the U.S. Navy which retains control over the dam and its watershed. Guam has limited control and authority over dam operations or the watershed within the U.S. Navy's Fena Reservoir because it is located on federal property. Guam also has no viable plans for constructing a new dam to supplement its current water production capabilities. In the unlikely event that a new dam is contemplated in the future, Guam has authorities such as the Guam Water Quality Standards, Water Pollution Act, and the Guam Soil Erosion and Sediment Control Regulations, requiring an extensive permitting process to review a project as a major siting and can ensure the implementation of appropriate management measures to protect water quality in Guam. To demonstrate this, Guam's Attorney General submitted a legal opinion stating that Guam has

adequate legal authority to ensure implementation of the 6217 (g) measures, including the hydromodification measures, when necessary.

### Streambank and Shoreline Erosion—Eroding Streambanks and Shorelines

Guam's NPS Plan submittal lays out several authorities that assist in protecting streambanks and shorelines from erosion such as the Guam Territorial Seashore Act and Guam Soil Erosion and Sediment Control Regulations. Guam also has several programs that help identify and repair priority streambank and shoreline erosion problems. Because Guam is a relatively small territory with a close culturally-bound population, citizens frequently report eroding streambanks to the Guam Department of Public Works (DPW). The DPW is responsible for routine maintenance of streambanks and performs erosion control improvements as part of the department's ongoing roadside and drainageway maintenance operation. DPW initially identifies shoreline erosion through routine operation and maintenance activities, post-typhoon assessments, and island-wide monitoring and assessments. Follow-up restoration and protection of eroding or other non-eroding streambanks are accomplished through routine maintenance operations, capital improvements, and hazard mitigation projects.

Other ongoing streambank erosion control efforts include the Urban Forestry project supported by the Coral Reef Initiative that is identifying erosion-prone streambank and shoreline areas and working with community partners to conduct planting projects to control erosion. The Coral Reef Initiative is also funding training for the government and private sector on vegetative erosion prevention measures. The training instructs how these alternative shoreline stabilization methods can be effective methods for reducing nonpoint source pollution and preserving shoreline habitat, and recommends vegetative methods be used to the greatest extent possible.

Finally, Guam's Comprehensive Watershed Planning Process (CWPP) lends additional support to the eroding streambanks and shorelines management measure. Guam has developed detailed guidance/model scope of work for developing watershed plans. The guidance stipulates that the watershed plans include nonpoint source control strategies to prevent and mitigate impacts from hydromodification activities as appropriate (i.e., when streambanks and shorelines are identified as a significant pollution sources). The Territory has also developed a timeline for developing and implementing watershed plans throughout its 6217 boundary over the next 15 years and has committed to allocating \$100,000 a year to develop and implement these watershed plans. NOAA and EPA encourage Guam to continue to implement this CWPP and develop watershed plans consistent with the (g) guidance.

### **WETLANDS, RIPARIAN AREAS AND VEGETATED TREATMENT SYSTEMS**

**CONDITION:** Within three years, Guam will include in its program management measures in conformity with 6217(g) guidance for the protection and restoration of wetlands and riparian areas, and vegetated treatment systems. Within one year, Guam will develop a strategy (in accordance with section XII, page 12) to implement the management measure for protection of wetlands and riparian areas throughout the 6217 management area.

**DECISION:** Guam has satisfied these conditions.

**RATIONALE:** Appendix B of Guam’s Water Quality Standards (WQS) asserts that all Guam wetlands are protected from degradation and that limited degradation may be permitted provided that reasonable alternatives are not available and that the applicants have implemented BMPs, worked to avoid impacts to hydromodification, minimized impacts, and agreed to mitigate for the destruction. Appendix C, Constructed Wetlands for Water Quality Improvement, is also consistent with the (g) measures for wetland restoration and vegetated treatment system measures. Appendix “C” encourages the expansion and use of Guam’s wetlands through wetland creation and restoration.

In addition to the WQS, Guam relies on several other programs to address the wetland and riparian measures including its new Stormwater Management Manual and the Comprehensive Wetland Planning Process (CWPP). The Stormwater Management Manual calls for protecting the riparian corridor by limiting clearing within the riparian corridors as well as applying perimeter sediment controls between disturbed areas and the corridor. The manual also promotes vegetated treatment systems. Guam provided several examples of how it is currently implementing these practices including integrating vegetated treatment systems into existing developments, such as the Leo Palace Resort, to control stormwater runoff, and restoring riparian areas by planting trees through its Urban Forestry program.

In addition, the CWPP provides further support for the wetlands and riparian measures. Guam has developed detailed guidance and a model scope of work for developing watershed plans. The guidance stipulates that the watershed plans include nonpoint source control strategies consistent with the (g) guidance as appropriate. Guam has also developed a timeline for developing and implementing watershed plans throughout the Territory over the next 15 years and has committed to allocating \$100,000 a year to develop and implement these watershed plans. NOAA and EPA encourage Guam to continue to implement this CWPP and develop watershed plans consistent with the (g) guidance.

#### **ADMINISTRATIVE COORDINATION**

**CONDITION:** Within one year, Guam will establish a process for ensuring coordination among Territorial agencies with a role in the implementation of the coastal nonpoint program.

**DECISION:** Guam has satisfied this condition.

**RATIONALE:** On March 3, 2004, the governor of Guam signed an Executive Order (No. 2004-04) establishing the Watershed Planning Committee. The Committee formed a Nonpoint Source Subcommittee to oversee, review and ensure the implementation of the Guam Nonpoint Source Pollution Management Plan. The subcommittee meets regularly and consists of staff from the agencies and departments tasked with implementing and enforcing the Territory’s Nonpoint Plan.

#### **CRITICAL COASTAL AREAS, ADDITIONAL MANAGEMENT MEASURES and TECHNICAL ASSISTANCE**

**CONDITION:** Within two years, Guam will develop a process for the identification of critical coastal areas and a process for developing and revising management measures to be applied in critical coastal areas and in areas where necessary to attain and maintain water quality standards. Within two years, Guam will also develop a program to provide technical assistance in the implementation of additional management measures.

**DECISION:** Guam has satisfied these conditions.

**RATIONALE:** Executive Order No. 2004-04 establishing the Watershed Planning Committee and requiring implementation of a comprehensive watershed planning process mandates that the Watershed Planning Committee identify critical coastal areas (CCAs) that need additional management measures. The E.O. also charges the committee with developing a “process to identify, implement, evaluate, and as necessary, revise additional management measures to mitigate problems” that may occur within the identified CCAs. NOAA and EPA encourage Guam to move forward with its CCA designation process.

Guam provides technical assistance to address nonpoint source pollution issues through: providing one-on-one assistance to individual programs and agencies; sponsoring workshops and trainings on new or revised policies and regulations and other water quality topics; and developing and disseminating websites, guidance documents, and general publications to engineers, planners, regulators, managers and the general public. In addition, Guam provides technical assistance through permit reviews and inspections by instructing engineers and contractors on how to incorporate and maintain stormwater controls and design developments to minimize polluted runoff.

## **MONITORING**

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

**DECISION:** Guam has satisfied this condition.

**RATIONALE:** Guam operates several routine ambient water quality monitoring programs to assess baseline and trend data such as its 303(d) biannual assessments, weekly recreational beach monitoring program, and hourly turbidity tracking in the Ugum River. In 2004, Guam initiated an EMAP monitoring program to collect additional baseline and trend data. Guam uses software such as AVGWLF and PreDICT to evaluate changes in water quality due to BMP implementation.

The Territory builds effectiveness monitoring into projects permitted under the Guam Nonpoint Source Management Program and projects funded through the Watershed Subcommittee. For example, the effectiveness of tree planting and riparian restoration in the Ugum Watershed is evaluated through regular water quality sampling downstream from the restoration sites.

Guam is also tracking implementation of select management measures. For example, GEPA conducts annual, island-wide inspections of existing OSDS to document any violations and repairs that may be needed. The NRCS, in conjunction with partner organizations, tracks implementation of erosion and sediment control and CAFO BMPs on agricultural land. Implementation of the Guam Watershed Management Plan, which addresses many management measures, is assessed during quarterly and annual reports by the Watershed Planning Committee.

Finally, Guam is currently developing an investigative monitoring program that will trigger detailed water quality monitoring in response to adverse changes in water quality to identify the source(s) of water quality impairment.