UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

September 2, 2016

FACT SHEET
DRAFT NPDES PERMIT NO. GUS040000
MUNICIPAL SEPARATE STORM SEWER SYSTEM
DEPARTMENT OF DEFENSE FACILITIES ON THE ISLAND OF GUAM

Permittee and Mailing Address: Department of the Navy
Naval Base Guam (NBG)
PSC 455, Box 152
FPO AP, Guam 96915

Permitted Facility and Location: Municipal Separate Storm Sewer System (MS4) Serving Department of Defense Facilities on the Island of Guam

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SUMMARY: The Department of the Navy (DON) has applied to the U.S. Environmental Protection Agency, Region 9 for a National Pollutant Discharge Elimination System (NPDES) permit for discharges from the municipal separate storm sewer system (MS4) serving the portion of the Island of Guam under the jurisdiction of the Department of Defense (DoD). The discharges regulated by the permit would consist primarily of stormwater runoff, but could also include certain specified non-stormwater discharges as well.

NPDES permit coverage for the discharges is proposed in accordance with a preliminary residual designation decision made by Region 9 on February 8, 2011, in accordance with section 402(p)(2)(E) and (6) of the Clean Water Act (CWA), and NPDES regulations at 40 CFR 122.26(a)(9)(i)(D). Additional information concerning the rationale for the designation can be found below and in Region 9's residual designation memorandum which can be found in Appendix A.

Region 9 has prepared a draft permit based on the permit application and is proposing to issue the permit. The draft permit requires the implementation of a stormwater management program to control pollutants in the discharges as required by the CWA. Annual reporting is also required to provide information on the status of the implementation of the stormwater management program.

PUBLIC COMMENT PERIOD: Comments on the draft permit must be received or postmarked no later than _____, 2016. Public comments on the draft permit may be submitted by U.S. Mail to: Environmental Protection Agency, Region 9, Attn: Eugene Bromley, NPDES Permits Section (WTR-2-3), 75 Hawthorne Street, San Francisco, California 94105-3901, or by email to: bromley.eugene@epa.gov. Based on the comments received, Region 9 will prepare a response to comments for the final permit.

REQUESTS FOR A PUBLIC HEARING: Interested persons may also request a public hearing pursuant to 40 CFR 124.12 concerning the draft permit. Requests for a public hearing must be sent or delivered in writing to Eugene Bromley at the above address prior to the close of the comment period. Requests for a public hearing must state the nature of the issues proposed to be raised in the hearing. Pursuant to 40 CFR 124.12, the Regional Administrator shall hold a public hearing if he finds, on the basis of requests, a significant degree of public interest in the draft permit. If the Regional Administrator decides to hold a public hearing, a public notice of the date, time and place of the hearing will be made at least 30 days prior to the hearing. Any person may provide written or oral statements and data pertaining to the draft permit at the public hearing.

FOR FURTHER INFORMATION CONTACT: For further information on the draft permit, contact Eugene Bromley, EPA, Region 9 (WTR-2-3), 75 Hawthorne Street, San Francisco, CA 94105, telephone (415) 972-3510, email: Bromley.eugene@epa.gov. Copies of the draft permit and fact sheet will be provided upon request and are also available on Region 9's website at: http://www.epa.gov/region09/water/npdes/pubnotices.html.

ADMINISTRATIVE RECORD: The draft permit and other related documents in the administrative record are on file and may be inspected any time between 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding legal holidays, at the address shown below.

U.S. EPA, Region 9
NPDES Permits Section (WTR-2-3)
75 Hawthorne Street
San Francisco, CA 94105-3901

SUPPLEMENTARY INFORMATION

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1. Background

Region 9's 2011 designation memorandum (Appendix A) provides an overview of the statutory and regulatory background underlying the draft permit. The memorandum also discusses the factors that led Region 9 to propose designation of the MS4 discharges for permitting under the NPDES permit program. However, some of the information in the 2011 memorandum now needs to be updated. Below we provide this update.

1.1 2010 Census Results

EPA's Phase II regulations for small MS4s (64 FR 68722, December 8, 1999) require MS4 permits for urbanized areas due to higher levels of pollutants in stormwater runoff from concentrated centers of population, and the increased risks to receiving waters from the discharges from such areas. On May 1, 2002 (67 FR 21962), the Census Bureau published a list of urbanized areas based on the 2000 Census. Hagåtña, Guam was included on the list of urbanized areas with a population of 132,000, and ordinarily this would have triggered a requirement for an NPDES permit for the MS4 serving this area. However, on August 23, 2002 (67 FR 54631), the Census Bureau reclassified Hagåtña as urban cluster. Pursuant to an agreement between the Census Bureau and the government of Guam, "all urban areas defined within Guam based on the results of Census 2000 are designated as urban clusters regardless of their total population." 67 FR 54631. As a result, the Hagåtña MS4 no longer required an NPDES permit in accordance with the Phase II regulations. It should be noted, however, that the reclassification was simply a result of the Census Bureau's decision not to apply its criteria for urbanized areas to Guam, rather than any change in the population of the area.

The 2010 census results are now available and show that the population of Guam has increased slightly from the previous census. The principal urban area on Guam (now referred to as Dededo-Machanao-Apotgan) has a population of 139,825 based on the latest census (77 FR 18651, March 27, 2012), which is up from about 132,000 in 2000, and it has again been classified as an urban cluster. The increased population will only increase the risks to receiving waters from pollutants discharged from the MS4.
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1.2 Military Relocation of U.S. Marines to Guam

Another key concern leading to the 2011 designation was the proposed relocation of U.S. Marines from Okinawa to Guam[1], which was projected to increase the total population on Guam, and thereby increase the risks to receiving waters from stormwater discharges. Furthermore, the relocation would be accompanied by a substantial construction program, raising concerns over pollutants, especially sediment, in construction site runoff. In 2012, the relocation plans were

[1] DON. 2010. Final Environmental Impact Statement, Guam and CNMI Military Relocation, July 2010, available at: http://www.guambuildupeis.us/.

scaled back somewhat and time frame extended; the revised relocation plans are described in a draft supplemental EIS prepared in 2014[2] and record of decision finalized in August 2015.[3] While the scope of the relocation has been reduced, it is still projected to increase the population of the Island by about 7,400 new residents, and be accompanied by moderate construction activity. As such, risks to receiving waters from stormwater runoff remain.

1.3 2014 Integrated Report[4] Submitted by the Guam EPA

In support of the proposed designation, Region 9 cited numerous studies including the 2008 Integrated Report submitted by the Guam EPA pursuant to CWA sections 305(b), 303(d) and 314, which concluded that urban runoff and construction site runoff were significant contributors of pollutants to receiving waters of Guam.

In January 2015, the Guam EPA submitted its 2014 Integrated Report which provides an updated assessment. This report continues to show that urban runoff is a significant contributor of pollutants to receiving waters. Appendix B to the Report lists the categories of discharges that are contributing to impairments and urban runoff is frequently cited.

1.4 2012 DON Permit Application

It its 2012 MS4 permit application, DON disagreed with Region 9's tentative determination that MS4 discharges (at least from DoD facilities) were a significant source of pollutants. As noted above, Guam EPA's 2014 Integrated Report continues to conclude that stormwater discharges for the Island as a whole are a significant source of pollutants. Appendix C shows that DoD facilities are widely dispersed on the Island, and after Region 9's September 2015 visit to Guam (see section 1.5 below) we still believe that at least some DoD facilities are a significant source of pollutants.

As noted in 2011 designation memorandum, the final decision as to whether the designation was proper remains open until the end of the public comment period for the draft permit. For now, Region 9 believes the best course is to continue the permit issuance process and re-evaluate the designation issue at the close of the comment period for the draft permit. At that time, a more informed decision could be made that would consider (and benefit from) information received from the public during the comment period.

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[2] DON. 2014. Supplemental Environmental Impact Statement, Guam and Commonwealth of the Northern Mariana Islands Military Relocation (2012 Roadmap Adjustments), April 2014.

[3] DON. 2015. Record of Decision for the Final Supplemental Environmental Impact Statement for Guam and Commonwealth of the Northern Mariana Islands Military Relocation, August 28, 2015.

[4] Guam EPA. 2014. Guam Environmental Protection Agency 2014 Integrated Report, September 30, 2014.

1.5 U.S EPA Visit to Guam in September 2015

In August 2015, EPA distributed draft MS4 permits for DON and the Guam DPW.[5] In September 2015, EPA also held a public meeting in Guam to discuss the draft permits, receive feedback from the permittees and other interested parties on the permits, and to get a first-hand look at the storm sewer system and stormwater management on Guam. Region 9 prepared a trip report[6] that summarizes the findings and conclusions from the trip. As discussed below, EPA has made certain revisions to the draft permits based on feedback from the meeting, and the actual observations of the storm sewer system.

During the September 2015 public meeting, DoD presented information regarding facilities in northern Guam where DoD believes most stormwater percolates into the ground due to the porous soil and that actual discharges rarely (if ever) occur. On February 4, 2016, DON also submitted written comments on its early draft permit and provided additional information describing the geology of the island.[7] EPA viewed DoD facilities in northern Guam, as well as other parts of northern Guam and noted retention or infiltration basins are common features. Based on this information, Region 9 has reconsidered the geographic scope of the proposed MS4 permit for DoD facilities in northern Guam; the specific facilities that DoD felt were inappropriate for permitting are Andersen AFB, Northwest Field, NCTS, Finegayan and Barrigada. During the EPA visit to DoD facilities in northern Guam, it did appear that surface stormwater discharges would be rare. Based on current information, the facilities in northern Guam that DoD suggested for removal were removed from the draft permit.

There was no disagreement that surface stormwater discharges do occur at other DoD facilities on Guam such as the Guam Naval Base, and the trip provided no new information that would change Region 9's previous conclusion that at least some DoD facilities are significant sources of pollutants on Guam. The revised permit includes the following DoD facilities: Naval Base at Apra Harbor; family housing/community support areas at Apra Heights and Nimitz Hill; Naval Magazine; and Naval Hospital and adjacent high school. The revised list will allow DoD to focus on areas most likely to be contributing to the water quality impairments noted in the 2014 Integrated Report.

Stormwater discharges percolating into Guam's porous soils may nevertheless be transported (possibly with pollutants) to surface waters through a groundwater connection. Figure 1 shows the limestone plateau of the northern half of Guam and the line of demarcation (Adelup Fault) separating the southern half of the island where the volcanic upland soils are less

[5] Region 9 is also proposing a separate draft MS4 permit for Guam's non-DoD areas, NPDES permit No. GUS040001. A separate MS4 permit application was submitted by the Guam Department of Public Works (DPW) for the MS4 serving non-military areas on Guam.

[6] EPA Region 9. 2015. Trip Summary, NPDES Permit Visit to Island of Guam, October 30, 2015.

[7] February 4, 2016 Letter from Mark Bonsavage to Tomas Torres, Water Division Director, EPA Region 9.

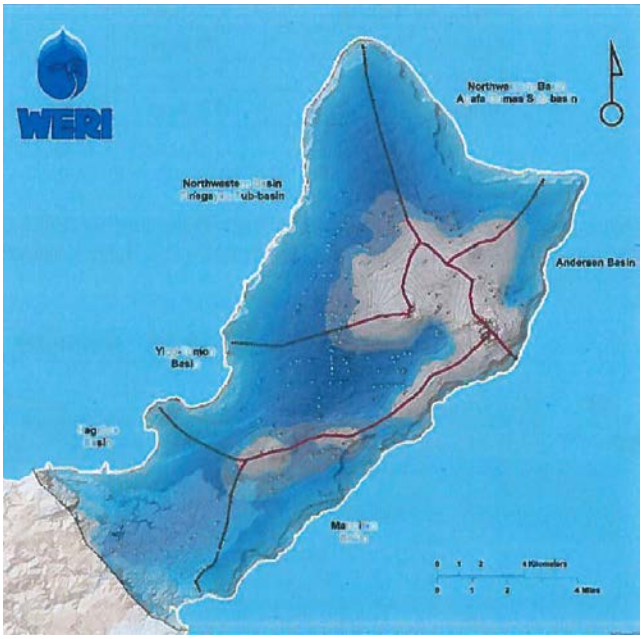

Figure 1 – Limestone Plateau of Northern Guam
Source: 2014 Integrated Report

permeable. As noted above, given the porous soils in northern Guam, much of the stormwater runoff infiltrates into the ground rather than being discharged. However, the 2014 Integrated Report indicates that stormwater runoff contributes to various water quality impairments even in northern Guam such as impairments to recreational waters in the Hagåtña Bay and Tumon Bay areas. Region 9 and Guam EPA will continue to evaluate the potential water quality impacts from stormwater runoff in northern Guam and future requirements for stormwater management may be developed in accordance with the findings of such evaluations.

At the meeting both DoD and the Guam DPW had a general request for more time for implementation of permit requirements. In response, several of the deadlines in the first drafts were extended in second draft permits that were provided to the permittees in April 2016. In an email[8] to Region 9 dated June 2, 2016, DON provided comments on the second draft permit. Among the comments, DON requested an additional 12 months (24 months total) for the development of the SWMP. Given that this is the first MS4 permit issued to DON, Region 9 believes that 18 months should be sufficient and the draft permit was revised to provide 18

[8] Email dated June 2, 2016 from Charles Damian of NAVFAC Marianas to Eugene Bromley, Region 9.

months.[9] However, as discussed in section 4.1.1 of this fact sheet, if the permittee desires a permit modification to incorporate a compliance schedule to achieve compliance with TMDL requirements, a proposed compliance plan and implementation schedule would be due 12 months after the permit effective date. Part 5.5 of the revised drafts also includes a summary of the deadlines for the various requirements of the permits.

2. Summary of Permit Conditions

2.1 Permit Area.

The draft permit would apply to the MS4 operated by the permittee within the area described in Appendix D on the Island of Guam, which includes the following existing facilities.[10]

> **Navy Facilities:** Naval Base at Apra Harbor; family housing/community support areas at Apra Heights; Naval Magazine; and Naval Hospital and adjacent high school.[11]

See Appendix C for a map showing the location of these facilities. The permit would also cover any new MS4s owned or operated by the permittee that are constructed in the future within the permit area.

2.2 Authorized Discharges.

Subject to the terms of the permit, during the period beginning the effective date of the permit and lasting through the expiration of the permit, the permittee would be authorized to discharge stormwater and other non-prohibited discharges (see section 2.3 below) from all outfalls of the permittee's regulated MS4.

2.3 Prohibitions – Non-Stormwater Discharges

[9] The 2012 Los Angeles County MS4 permit (NPDES permit No. CAS004001) also provides 18 months for the development of programs of greater complexity. Likewise, the 2013 San Diego Regional MS4 permit (NPDES permit No. CAS0109266) provides 18 months. Based on experiences such as these in California, Region 9 believes that 18 months would be appropriate for DON as well.

[10] In its MS4 permit application, DON noted that discharges from the Sasa Valley and Tenjo Vista fuel farms are entirely covered by EPA's multi-sector general permit (GUR050000); as such separate MS4 permitting is not needed and those facilities are not covered by this permit.

[11] For reasons discussed in section 1.5 of the fact sheet, the DON MS4 permit area does not include the western tip of Navy Barrigada that is within the Hagåtña watershed. The watersheds that comprise the DON permit area match those proposed for NPDES permit No. GUS040001 for the Guam DPW MS4 based on considerations discussed in section 1.5.

As noted in section 3.3 below, the permittee must implement an ongoing program of various activities related to the prevention of illicit connections and illegal dumping of pollutants into the MS4. NPDES regulations also clarify that although the permittee must address all types of unpermitted non-stormwater discharges to the MS4, certain types of minor discharges which are listed at 40 CFR 122.34(b)(3)(iii) need not be addressed unless the permittee determines that they are a significant source of pollutants. These basic regulatory requirements regarding the prohibition of unpermitted non-stormwater discharges are included in Part 1.3 of the draft permit. Additional requirements are found in Part 3.3 (Illicit Discharge Detection and Elimination).

Part 1.3.3 of the draft permit also provides that the permittee may develop additional categories of non-stormwater discharges that will not be addressed as illicit discharges. Such discharges must reasonably be expected not to be significant sources of pollutants, based on information available to the permittee or the controls placed on the discharges. This provision is being added to the permit since the list at 40 CFR 122.34(b)(3)(iii) may not be comprehensive.

2.4 Development of a Stormwater Management Program (SWMP)

2.4.1 General Requirements of the CWA

In developing the terms and conditions of the draft permit, Region 9 closely followed the recommendations in EPA's 2010 MS4 Permit Improvement Guide (2010 Guide, EPA 833-R-10-001)[12]; we also made extensive use of suggested permit language in the 2010 Guide. EPA began issuing NPDES permits for MS4s in the early 1990s and the 2010 Guide reflects almost 20 years of experience with these permits.

Since 2001, Region 9 has also been conducting audits of MS4 programs in the four states (Arizona, California, Hawaii and Nevada) that are within Region 9.[13] The audit reports consistently show the need for detailed, measurable permit requirements to provide clarity and to ensure an effective and enforceable permit. This need has also been recognized at the national level, and one of the principal goals of the 2010 Guide, and the suggested permit language in the Guide, was to address this need. As such, Region 9 believes the Guide constitutes an appropriate source of requirements for the draft permit.

In accordance with NPDES regulations at 40 CFR 122.33(b)(2)(i), DON submitted a proposed SWMP with its MS4 permit application, including numerous best management practices (BMPs) to control pollutants in the discharges. For the draft permit, and following the recommendation of the 2010 Guide, the SWMP is not considered to contain actual effluent limits; instead, these are found in the permit itself. The technology-related effluent limits are

[12] Available at: http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf

[13] MS4 audit reports are available: http://www.epa.gov/region9/water/npdes/ms4audits.html.

found in Part 3 while the water quality-related effluent limits are found in Part 4. By placing the effluent limits directly in the permit, the limits are available for public review at the time the draft permit is public noticed. This ensures an opportunity for public participation consistent with the 2005 decision by the Second Circuit Court in *Waterkeeper Alliance et al. v. EPA*, 399 F.3d 486, and the 2003 decision by the Ninth Circuit Court in *Environmental Defense Center, Inc. v. EPA*, 344 F.3d 832.

The draft permit does require the development, implementation and enforcement of a SWMP by DON. The SWMP is a written plan that describes the various BMPs through which the discharger complies with the actual effluent limits in the permit.

2.4.2 Other Requirements for Development of the SWMP

The 2010 Guide includes several other recommendations related to the development of a SWMP. These include ensuring adequate legal authority to implement the permit requirements, development of an enforcement response plan (ERP), and ensuring adequate resources to comply with the permit. The 2010 Guide also provides suggested permit language to address these issues; with minor modifications, the suggested permit language from the 2010 Guide has been incorporated into Parts 2.3, 2.4 and 2.5 of the draft permit.

3. Minimum Control Measures (MCMs)

As noted in Appendix A, the MS4 serving DON facilities on Guam is considered to be a Phase II or small MS4. NPDES regulations applicable to Phase II MS4s were promulgated by EPA on December 8, 1999 (64 FR 68722). The Phase II regulations at 40 CFR 122.34(b) set forth the following six MCMs to be included in SWMPs.

- Public Education and Outreach
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Stormwater Management in New Developments/Redevelopments
- Pollution Prevention/Good Housekeeping for Municipal Operations

The MS4 permit application submitted by DON includes a proposed SWMP that addresses each of the above MCMs. However, the 2010 Guide provides more detailed program descriptions for the MCMs than DON's proposed SWMP. In view of the need for permit clarity noted earlier, the draft permit language is largely derived from the 2010 Guide, while also including some of DON's proposals as well.

The permit language in the 2010 Guide was developed for the situation in which a permit is being reissued, and assumes a continuation of BMPs already being implemented in accordance with the previous permit. The draft permit for DON would be a first-round permit, and as appropriate, the draft permit provides time for development and implementation of many of the necessary programs. However, for some MCMs such as the construction program, DON's program is well developed already and the draft permit requires implementation of many of the components of the MCM on the permit effective date.

3.1 Public Education and Outreach

The specific requirements of the draft permit for this MCM were derived for the most part from the 2010 Guide, while also incorporating DON's suggestions for appropriate target audiences at DoD facilities. The draft permit would require the development of BMPs and measurable goals for the public education program within 18 months of the permit effective date after which program implementation would begin. Given the time necessary to develop appropriate outreach strategies and secure funding for the activities, Region 9 believes 18 months is reasonable.

3.2 Public Involvement/Participation

This MCM is closely related to the above MCM pertaining to public education/outreach, and the draft permit requirements are a blend of DON's permit application and the 2010 Guide. As in the case of the MCM for public education/outreach, the draft permit would require that the BMPs and measurable goals for public involvement/participation be developed within the first 18 months of the permit term. During this time period, funding would also be requested for program implementation in subsequent years, with implementation beginning 18 months after the permit effective date.

Part 3.2.1 of draft permit also includes a clarifying note that as part of the outreach efforts concerning the SWMP the permittee need not post restricted information such as classified national security information on the permittee's website. The draft permit language was derived from a similar provision in EPA's 2015 multi-sector general permit.[14] This provision was added in response to concerns from the permittee regarding inadvertent release of sensitive information. Clarifications were added to Part 3.3.6.1 and Part 3.6.4.2 of the permit for the same reason.

3.3 Illicit Discharge Detection and Elimination (IDDE)

The draft permit requirements for this MCM (Parts 3.3.1 through 3.3.7 of the draft permit) were derived largely from the suggested permit language in the 2010 Guide. However,

[14] Available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities#overview

the Guide leaves some of the specific requirements for the field screening program to the discretion of the permitting authority based on the issues of concern for a particular MS4. The proposed field screening requirements for the draft permit and certain issues related to MS4 mapping are discussed below. Otherwise the permit language closely follows the 2010 Guide.

3.3.1 MS4 Mapping.

As part of the IDDE program, Part 3.3.2 of the draft permit requires that the permittee develop and maintain an accurate map of the storm sewer system. In addition to certain other information recommended by the 2010 Guide, Part 3.3.2.1.6 requires that the permittee identify areas within the DoD facilities covered by the revised draft permit (if any) that do not discharge to a water of the U.S. (either directly or through a connection to another operator's MS4).

3.3.2 Field Screening Program.

The 2010 Guide does not provide a specific list of indicator parameters to be sampled for the field screening program; instead the list is developed on a case-by-case basis for the given MS4. The list in the draft permit was derived from the minimum suggested list in the 1999 Phase II MS4 regulations and includes ammonia, conductivity, surfactants and pH. In addition, enterococcus is included given that it is a common constituent of concern in Guam.

The 2010 Guide also recommends that benchmark levels be included that would require follow-up by the permittee if a benchmark is exceeded. Such benchmarks are include in Table 1 in the draft permit, along with required follow-up procedures in Part 3.3.5. The benchmark values (except for enterococcus) were obtained from the 2004 IDDE manual[15] prepared for EPA by the Center for Watershed Protection. For enterococcus the benchmarks are the same as the water quality standards for Guam found in Table 2 of the draft permit. Field test methods (such as those described in the 2004 IDDE manual) may be used except for enterococcus (a primary constituent of concern) where sampling and analysis much be conducted in accordance with 40 CFR Part 436.

As suggested by the 2010 Guide, annual screening would be conducted at all priority outfalls that are selected by the permittee in accordance with Part 3.3.3 of the draft permit. A minimum of 20% of all other outfalls would be screened per year; this frequency was suggested by the Guam Department of Public Works in its proposed SWMP submitted in accordance with Region 9's designation for permitting of the MS4 serving the non-DoD portions of Guam.

[15] Center for Watershed Protection. 2004. Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments, October 2004.

3.4 Construction Site Runoff Control

The proposed requirements in the draft permit for construction site runoff controls were also derived largely from the 2010 Guide. For construction projects associated with the military relocation to Guam, DON has also developed a detailed plan for managing construction site runoff entitled "National Pollutant Discharge Elimination System (NPDES) Program, Comprehensive Construction Stormwater Pollution Prevention Plan (Comprehensive SWPPP) for the Guam Military Relocation DPRI Construction Program", dated November 2014.

DON's Comprehensive SWPPP already addresses most of the requirements of the draft permit. However, the draft permit does add clarifying requirements to certain components of the program. For example, while the Comprehensive SWPPP refers to site inspections by DON staff, the specifics for the DON program such as the frequency and timing of the inspections is somewhat vague. As such, clarifying requirements are included in Part 3.4.4 of the draft permit. The minimum frequency for site inspections by DON personnel in the draft permit is quarterly (same as the 2015 permit for the Navy facility at Pearl Harbor, NPDES permit No. HIS000257), with more frequent inspections, as may be needed for particular projects, based on water quality risks, as determined by the permittee.

In addition, while the Comprehensive SWPPP refers in general to training to be provided for contractors and DON personnel, the details of the program are somewhat vague. As such, the more detailed requirements from the 2010 Guide are included in Parts 3.4.5 and 3.4.6 of the draft permit. Finally, the 2010 Guide recommends that a permittee consider information that may be received from the public in the implementation of its construction program. This issue was not addressed in the Comprehensive SWPPP; Part 3.4.6.2 was included in the draft permit based on suggested language from the 2010 Guide.

Given that the Comprehensive SWPPP is already available and being implemented, the draft permit requires that the plan be implemented immediately upon the effective date of the permit. The draft permit also requires that within 18 months of the permit effective date that the Comprehensive SWPPP be revised to be consistent with the requirements of the permit. During the first 18 months, funding would also be requested for program implementation in subsequent years. Full implementation would begin 18 months after the permit effective date, and it would apply to all DON construction projects, including any not associated with the military relocation.

3.5 Post-Construction Stormwater Management for New Developments/ Redevelopments

Here again, the proposed requirements for the draft permit were derived largely from the 2010 Guide. The draft permit includes post-construction site performance standards for on-site stormwater management consistent with the 2010 Guam Transportation Stormwater Drainage

Manual[16] (for transportation and linear projects) and the 2006 CNMI & Guam Stormwater Management Manual[17] for other projects (Parts 3.5.2.1 and 3.5.2.2 of the draft permit). This is consistent with requirements Region 9 is proposing for the MS4 permit for the Guam DPW, based on the permit application submitted by the Guam DPW.[18]

As noted earlier, Region 9's MS4 audits have shown the importance of quantitative, measurable requirements in MS4 permits in order to ensure clarity and enforceability. The manuals noted above include quantitative requirements (such as a specific design storm) for post-construction stormwater control measures that are comparable to requirements for other MS4s in Region 9. We believe they are consistent with the intent of the Phase II MS4 regulations and the draft permit requires that the design criteria in these manuals to be followed upon the permit effective date since they are already well-established and being implemented.

Guam DPW noted in an email to Region 9[19] that the manuals may be updated during the term of the permit to address climate change, and that project design should not be limited to the 2006 and 2010 manuals. This could also be a concern for DON and to address the concern the draft permit provides that updated manuals may be used in place of the existing manuals if they became available during the term of the permit.

In the selection of post-construction stormwater controls, Region 9 also favors practices that infiltrate, evapotranspire or harvest/reuse stormwater runoff (sometimes referred to as low impact development (LID)) over practices and treat and release the runoff; this is because full capture of the runoff (e.g., through infiltration) will also prevent the discharge of all pollutants in the runoff. This advantage of infiltration is recognized by the 2010 Guam Transportation Stormwater Drainage Manual and such practices are encouraged. However, the 2006 CNMI and Guam Stormwater Management Manual treats the various types of controls more or less equally. To ensure that the advantages and benefits of runoff capture are more fully realized, the draft permit (Part 3.5.2.3) requires that the permittee require such controls when approving projects unless they are demonstrated to be infeasible for a particular project.

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[16] Guam Department of Public Works. 2010. Guam Transportation Stormwater Drainage Manual, August 2010.

[17] Commonwealth of the Northern Mariana Islands and the Territory of Guam. 2006. CNMI and Guam Stormwater Management Manual, prepared by Horsley Witten Group, Inc. October 2006.

[18] DON's draft SWMP had proposed that DoD construction projects would comply with the site performance standards for on-site stormwater management consistent with DoD's Low Impact Development design policies contained in Unified Facilities Criteria 3-210-10 (which incorporate the requirements of section 438 of the Energy Independence and Securities Act (EISA) of 2009) as well as the 2006 CNMI & Guam Stormwater Management Manual. However, in its June 2, 2016 email to Region 9, DON indicated that while it is committed to complying with the section 438 standards, DON argued that inclusion of a requirement to comply with the standards in the MS4 permit would be inappropriate. Given DON's concerns and since similar standards can be obtained from the Guam manuals, Region 9 is not proposing inclusion of the section 438 standards in the draft MS4 permit.

[19] Email from Guam DPW to EPA Region 9 dated July 6, 2016.

DON's proposed SWMP only briefly mentions the development of procedures for aspects of the program such as inspection and maintenance of post-construction BMPs. As such, the more detailed suggested permit language from the 2010 Guide was included in the draft permit, addressing site plan review (Part 3.5.3), long-term maintenance and tracking (Parts 3.5.4 and 3.5.5) and inspections and enforcement (Part 3.5.6).

The 2010 Guide also recommends that retrofit requirements (with a focus on LID) be considered for MS4 permits to better control pollutants in runoff from existing development. LID control measures are more commonly installed in new developments and redevelopments since the controls can be more easily incorporated into a project as it is being constructed. However, the water quality benefits of LID (and other benefits such as groundwater recharge) would also result from the retrofit of LID controls in existing developed areas. For these reason, the 2010 Guide encourages development of retrofit plans and such a requirement has been included in the draft permit based on the suggested permit language in the 2010 Guide.

3.6 Pollution Prevention/Good Housekeeping for Municipal Operations

The draft permit requirements for this MCM were also largely derived from the 2010 Guide. DON's proposed SWMP does include a brief description of a program to address this MCM. However, the 2010 Guide provides more detailed permit language that was included in the draft permit and that Region 9 believes will ensure a clearer, and more effective and enforceable permit. Permit provisions derived from the 2010 Guide include Part 3.6.2 (municipal facility and controls inventory), Part 3.6.3 (facility assessment), Part 3.6.4 (facility-specific controls and standard operating procedures), Part 3.6.5 (storm sewer maintenance), Part 3.6.6 (street sweeping and cleaning), Part 3.6.7 (maintenance of structural controls), Part 3.6.8 (flood management), Part 3.6.9 (pesticide, herbicide and fertilizer application and management), Part 3.6.10 (training and education), and Part 3.6.11 (contractor requirements and oversight). As in the case of several other MCMs, 18 months are provided to develop BMPs and measurable goals for the program. The permittee would also request funding as necessary in the first 18 months and begin implementation of the program 18 months after the permit effective date.

The draft permit includes two additional proposed requirements that were not specifically derived from the 2010 Guide. These are discussed below and are based on emerging Region 9 priorities for the stormwater program and for NPDES permits in general.

3.6.1 Trash Management Plan.

In recent years, Region 9 has been encouraging requirements for the development and implementation of trash management plans in MS4 permits, given the growing concern over the

accumulation of marine debris in areas such as the North Pacific Gyre[20], and the listing[21] of various receiving waters as impaired under section 303(d) of the CWA due to trash. Although Guam's 2014 Integrated Report did not include any section 303(d) listings due to trash, Governor Eddie Calvo, in his March 2014 State of the Island address[22], acknowledged that trash and marine debris are a problem for Guam. In a 2010 report[23], the Guam Bureau of Statistics and Plans which is responsible implementing Guam's Coastal Management Program, notes that storm drains in particular are a significant source of marine debris for Guam. Cleanup statistics as reported by the Ocean Conservancy[24] also illustrate the problem of marine debris worldwide and for Guam specifically.

Although some of the BMPs in Part 3.6 address trash, Part 3.6.12 of the draft permit requires the development and implementation of a specific plan to reduce discharges of trash from the MS4. The specific requirements for the draft DON permit were derived from similar requirements in the 2011 and 2015 MS4 permits for the City and County of Honolulu (NPDES No. HIS000002), where Region 9 had worked with the State of Hawaii in developing the permit requirements. The draft DON permit requires the development of a program to first determine the current or baseline level of trash discharges, then implement BMPs to reduce trash discharges by 50% from baseline level and then to zero along a time schedule (as short as practicable but not to exceed 15 years) to be developed by DON. A monitoring program would also be required for measuring progress. In developing a suitable program we recommend that DON consider the trash management plan developed by the City and County of Honolulu.[25] California's recently adopted statewide trash policy[26] would be another potentially useful source of information.

Appendix A of the draft permit also includes a definition of the term "trash" which is the same as the definition of "litter" in Article 2 of Chapter 51 (Solid Waste Management and Litter Control) of 10 Guam Code Annotated, Health and Safety. This definition is also very similar to the definition of "trash" in California's statewide trash policy.

3.6.2 Asset Management Plan.

Lastly, Part 3.6.13 of the draft permit requires the development and implementation of an asset management plan (AMP). Region 9 has been emphasizing the development of AMPs in

[20] U.S. EPA Region 9. 2011. Marine Debris in the North Pacific, A Summary of Existing Information and Identification of Data Gaps, November 2011.

[21] For example, see listing data for Hawaii available at: http://ofmpub.epa.gov/waters10/attains_state.control?p_state=HI

[22] Available at: http://governor.guam.gov/2014/03/25/state-island-green-guam-today-tomorrow-2/

[23] Guam Bureau of Statistics and Plans, Section 309 Assessment and Strategy 2011-2015, September 2010.

[24] Ocean Conservancy. 2014. Turning the Tide on Trash, 2014 Report

[25] City and County of Honolulu, Trash Reduction Plan, City and County of Honolulu, National Pollutant Discharge Elimination System (NPDES Permit No. HIS000002, June 2012).

[26] See http://www.waterboards.ca.gov/water_issues/programs/trash_control/documentation.shtml.

recent years as a useful tool for ensuring consistent performance of water infrastructure systems while minimizing the costs associated with the operation of these systems. The specific provisions of the draft MS4 permit were derived from a 2014 Region 9 AMP guide[27] and include requirements for an inventory of MS4 assets, an identification of the required performance, a plan for maintenance, rehabilitation and replacement of assets, cost projections, and an assessment of climate change impacts.

3.7 Industrial/Commercial Stormwater Sources

Although the Phase II regulations do not specifically address stormwater discharges from industrial/commercial sources, the 2010 Guide recommends that controls for these sources be considered for Phase II MS4 permits. DON's permit application notes that a number of industrial facilities are present at DoD facilities on Guam, especially in the Naval Base Guam area. DON's website for Naval Base Guam[28] also notes the presence of numerous on-base commercial facilities such as the Navy Exchange, various restaurants, auto repair facilities, a commissary and other facilities that are typical of a municipality, but which may also be sources of pollutants in stormwater runoff.

Given the presence of such industrial/commercial facilities, Region 9 believes BMP requirements are appropriate for the permit to control pollutants in the runoff. The 2010 Guide provides suggested permit language which Region 9 has included in the draft permit, with minor edits to accommodate the specific MS4 involved.

Region 9 recognizes that development of the program will take time, and therefore the draft permit phases in the new requirements. The permit provides two years to develop BMPs and measurable goals for the program. The permittee would also request funding as necessary within the first two years and begin implementation of the program at the start of the third year of the permit term.

4 Special Conditions

4.1 Total Maximum Daily Load (TMDL) Requirements

4.1.1 Guam Bacteria TMDLs for Twenty-Five Beaches and Northern Watershed Bacteria TMDLs

[27] U.S. EPA Region 9. 2014. Asset Management, Incorporating Asset Management Planning Provisions into NPDES Permits, available at: http://www.epa.gov/region9/water/npdes/asset-mgmnt/index.html, December 2014.

[28] See http://www.militaryinstallations.dod.mil/MOS/f?p=MI:CONTENT:0::::P4_INST_ID,P4_CONTENT_DIRECTORY,P4_TAB:3025,ALL,IC

The Twenty-Five Beaches Bacteria TMDL[29] was approved by EPA on February 20, 2015 and establishes wasteload allocations (WLAs) for enterococcus in various discharges (including stormwater runoff) at 25 beaches primarily in the southern half of the Island of Guam. The Northern Watershed Bacteria TMDL[30] was approved by EPA on March 17, 2010 and establishes the same WLAs for discharges (again including stormwater) near beaches in the Tumon Bay area. The WLAs require compliance with Guam water quality standards (GAR GEPA, Division II - Water Control, Chapter 5) at the discharge point.

Some of the DoD facilities on Guam such as the Naval Hospital in the north to the Guam Naval Base itself are in the vicinity of the beaches covered by the TMDLs and the drainage from DoD facilities may be contributing to the impairments.

NPDES regulations at 40 CFR 122.44(d)(1)(vii)(B) require effluent limits in permits that are consistent with applicable WLAs. Region 9 recognizes, however, that immediate compliance with enterococcus WLAs may not be practicable for DON. As such, the draft permit provides an opportunity for the development and implementation of a plan (along with an implementation schedule) for coming into compliance, including a rigorous, quantitative demonstration that the proposed control measures in the plan would ensure compliance with the WLAs; as noted earlier, Region 9's MS4 audits have shown the need for such requirements in the MS4 permits. Submittal of the plan would be required within 12 months of the permit effective date. The plan would be required to achieve compliance as soon as practicable. After submittal of the plan, the permit may be reopened and modified to require implementation of the plan, after considering public comment. If such a plan is not submitted, the WLAs would become effective within 18 months of the permit effective date.

The 2011 MS4 permit for the City and County of Honolulu (CCH) was used as a model in deriving the specific permit language for DON's Guam permit. For the CCH permit, Region 9 had worked with the State of Hawaii in developing permit language for circumstances similar to those for the DON permit for Guam.

4.1.2 Other Approved TMDLs for Guam

EPA also approved a sediment TMDL[31] for the Ugum Watershed on February 22, 2007. Although the Naval Munitions Site extends slightly into the Ugum Watershed, the land cover in the area of the overlap is largely forest land and range land and the runoff from such areas would

[29] Guam EPA. 2013. Bacteria TMDLs for Twenty-Five Beaches, Prepared by Tetra Tech, December 2013; the TMDL can be accessed at: http://iaspub.epa.gov/waters10/attains_state.control?p_state=GU

[30] Guam EPA. 2009. Development of Guam Northern Watershed Bacteria TMDLs, Prepared by Tetra Tech, December 16, 2009, can be accessed at: http://iaspub.epa.gov/waters10/attains_state.control?p_state=GU

[31] Guam EPA. 2006. Sediment TMDL, Ugum Watershed, Guam USA, prepared by Tetra Tech and USEPA, October 16, 2006, can be accessed at: http://iaspub.epa.gov/waters10/attains_state.control?p_state=GU

be considered nonpoint source runoff excluded from the NPDES permit program. Furthermore, a 2005 assessment by WERI[32] did not identify DoD activities in the watershed as a significant source of sediment. As such, no requirements related to this TMDL were included in the draft permit.

4.1.3 TMDLs Established After Permit Issuance

The draft permit (Part 4.1.2) provides that if a TMDL is approved for any waterbody into which the permittee discharges and if that TMDL includes a WLA for a discharge from DON's MS4, EPA may reopen and modify the permit to include the requirements of the TMDL. Monitoring of the discharges may also be required, as appropriate, to ensure compliance with the TMDL. Part 4.1.2 of the draft permit would ensure expeditious implementation through the permit for any TMDLs that may be developed and approved.

4.2 Compliance with Guam Water Quality Standards

Part 4.2 of the draft permit includes a general requirement that the discharges not cause or contribute to exceedances of applicable water quality standards for Guam (22 GAR GEPA, Division II, Water Control, Chapter 5). This requirement would apply to parameters other than those that are subject to TMDLs as described above. Comparable requirements can be found in the 2015 MS4 permit issued by the State of Hawaii Department of Health for Navy Region Hawaii (NPDES permit No. HIS000257). The Navy Region Hawaii MS4 is similar to the Navy's MS4 on Guam and Region 9 wishes to ensure consistency in the requirements of the MS4 permits in the Region.

4.3 CWA Section 401 Certification Requirements

In accordance with 40 CFR 124.53 and section 401 of the CWA, EPA may not issue a permit until certification is granted or waived in accordance with section 401 by the state or territory in which the discharge originates. Certification must be in writing and must include any conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of state or territorial law. The decision to waive, grant, or deny certification is based on the *draft*, not the final "as issued," permit. See 40 CFR 124.53(c)-(e).

Region 9 has certified the draft permit to the Guam EPA (GEPA) and requested that GEPA make a written determination regarding certification under CWA section 401, including any specific conditions necessary to assure compliance with applicable requirements. Part 4.5 of the draft permit has been reserved for any such conditions.

[32] Water and Environmental Research Institute of the Western Pacific. 2005. Environmental Assessment for Non-Point Sources of Pollution for Ugum Watershed, December 2005.

5. Monitoring, Evaluation and Reporting Requirements

The 2010 Guide also recommends permit requirements and provides suggested permit language addressing information tracking, discharge monitoring, program effectiveness assessment and reporting. The draft permit incorporates requirements derived from the 2010 Guide as discussed below.

5.1. Information Tracking System

As recommended by the 2010 Guide, Part 5.1 of the draft permit includes a requirement for the development of an information tracking system within the first 18 months of the term of the permit.

5.2 Monitoring Requirements

In developing the monitoring requirements for the draft permit, Region 9 considered the requirements of permits for similar facilities such as the Naval Base at Pearl Harbor, Hawaii. This facility has been under permit since the 1990s and the most recent 2015 permit (NPDES permit No. HIS000257) issued by the State of Hawaii reflects many years of experience in developing appropriate monitoring requirements for such a facility. Region 9 also considered the requirements of the 2013 permit issued by the San Diego Regional Water Board for the San Diego Naval Base (NPDES permit No. CAS019169).

In selecting a list of constituents for the monitoring program, Region 9 considered the lists in the NPDES permits noted above and also: (1) a list provided in the Guam DPW MS4 permit application of pollutants commonly found in MS4 discharges nationwide that are potentially of concern for Guam as well; (2) pollutants of concern identified in the 2014 Integrated Report submitted by the Guam EPA[33], (3) the 2006 CNMI & Guam Stormwater Management Manual, and (4) the list in the Phase I MS4 regulations (40 CFR 122.26(d)(2)(iii)) for properly characterizing the discharges.

The draft permit would require monitoring at a minimum of five MS4 outfalls selected by the permittee to be representative of industrial, commercial and residential areas under the jurisdiction of the permittee on Guam. DON's 2014 annual report for its facility at Pearl Harbor indicates that DON had selected eight outfalls for its monitoring program at that Naval Base, and this provides at least a benchmark for an appropriate program for the Guam facilities, which are similar in size to those at Pearl Harbor. The permit for DON's Guam facilities would be a first-

[33] PCBs in particular were added to the list based on the 2014 Report.

round permit and Region 9 believes five is a reasonable minimum number of outfalls to be sampled.

The monitoring frequency proposed for the DON Guam permit is annual for most pollutants which is the same as the frequency in DON's Pearl Harbor permit. However, more frequent (quarterly) sampling is proposed for enterococcus given the significance of this pollutant in contributing to the impairment of Guam's receiving waters. The sample type for most pollutants is composite consistent with 40 CFR 122.21(g)(7) for stormwater sampling, except for certain pollutants such as temperature and pH for which composite sampling is not practicable, and grab sampling is required instead.

Given the variety of pollutants that may be present in stormwater runoff, the draft permit also requires whole effluent toxicity (WET) monitoring which measures the aggregate effect of all the pollutants in a discharge. The draft permit requirements for DON were modeled after other recent permits for Guam facilities such as the 2013 permit for the Agana/Hagåtña Sewage Treatment Plant (NPDES permit No. GU0020087). Finally, the permit requires that the permittee monitor for any additional pollutants of concern that may be identified from the source assessment requirements found elsewhere in the permit.

The draft permit would require the development of the monitoring program within 18 months of the permit effective date. During the first 18 months, the permittee would also request funding for implementation which would begin 18 months after the permit effective date.

5.3 Reporting Requirements

In accordance with 40 CFR 122.34(g)(3), Part 5.4 of the draft permit requires the submittal of an annual report to the permitting authority. The permit language and the specific information to be provided were largely taken from the recommendations of the 2010 Guide. However, the permit must also include provisions implementing the requirements of EPA's new electronic reporting requirements (80 FR 64064) that became effective on December 21, 2015. Under this new rule, MS4 annual reports must be submitted electronically no later than five years after the effective date of the new requirements, i.e., no later than December 21, 2020, using EPA's NPDES Electronic Reporting Tool (NeT), which provides a secure internet connection. The e-reporting requirement and deadline of December 21, 2020 are incorporated into Part 5.4.4 of the draft permit.

Hard copies of annual reports submitted to EPA prior to electronic submittal using NeT shall be submitted to: Water Enforcement Section II (ENF-3-2), EPA Region 9, 75 Hawthorne Street, San Francisco, CA 94105. Prior to December 21, 2020, the permittee may also elect to electronically submit annual reports instead of hard copies.

The first report is due _____, 2017, covering the activities of the permittee during the period beginning on the effective date of the permit and ending _____, 2017. Subsequent annual reports are due on _____ of each year following 2017 during the remainder of the term of the permit.

6 Other Legal Requirements

6.1 Endangered Species Act Requirements

The Endangered Species Act (ESA) allocates authority to and administers requirements upon Federal agencies regarding threatened or endangered species of fish, wildlife, or plants and habitat of such species that have been designated as critical. Its implementing regulations (50 CFR Part 402) require EPA to ensure, in consultation with the Secretary of the Interior or Commerce, that any action authorized, funded or carried out by EPA is not likely to jeopardize the continued existence of any threatened or endangered species or adversely affect its critical habitat (40 CFR 122.49(c)).

Implementing regulations for the ESA establish a process by which Federal agencies consult with one another to ensure that the concerns of both the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) (collectively Services) are addressed. In compliance with the applicable regulations, Region 9, in letters dated April 29, 2015 to the Services, requested initiation of informal consultation and also requested lists of threatened and endangered species for inland areas and nearby coastal waters of Guam.

The intent of the permit is to reduce the discharge of pollutants in stormwater discharges on Guam that have never been subject to the NPDES permit program before; as such, Region 9 believes the implications of the permit issuance will be almost exclusively beneficial for listed species. However, as noted earlier, structural stormwater controls (such as LID features) must be included, as appropriate, in new developments/redevelopments and retrofit projects, in accordance with MCM #5. The construction of such controls may also adversely affect the habitat of endangered or threatened species. To address this issue, Part 4.3 was included in the draft permit that provides that in complying with the requirements of the permit, the permittee need not construct any structural stormwater controls which could adversely affect endangered or threatened species.

In sum, when EPA issues the final MS4 Permit it will require DON to begin controlling pollutants in existing stormwater discharges. The effects of this new MS4 Permit are expected to be beneficial to the affected environment due to the reduction of pollutants from current conditions. EPA has initiated informal consultation with the Services under ESA Section 7(a)(2) to explore the potential effects of this action but given the nature of the action (adding pollutant controls to existing discharges), EPA expects the action will not likely adversely affect listed

species or designated critical habitat as it is intended to reduce current levels of pollutants in discharges from the MS4 and will have beneficial effects on listed species and designated critical habitats.

6.2 Coastal Zone Management Requirements

The Coastal Zone Management Act (CZMA) requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Program (CZMA sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR 930 prohibit Region 9 from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the state (or territory) Coastal Management Program, and the state (or territory) or its designated agency concurs with the certification. In Guam, the CZMA authority is the Guam Bureau of Statistics and Plans.

On _____, the Guam Bureau of Statistics and Plans concurred with the permittee's certification that the proposed discharge complies with the enforceable policies of the Guam Coastal Management Program.

6.3 Historic Preservation

The National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of Federal undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places (NRHP). The term "Federal undertaking" is defined in the NHPA regulations to include any project, activity, or program under the direct or indirect jurisdiction of a Federal agency that can result in changes in the character or use of historic properties, if any such historic properties are located in the area of potential effects for that project, activity, or program (36 CFR 802(o)). Historic properties are defined in the NHPA regulations to include prehistoric or historic districts, sites, buildings, structures, or objects that are included in, or are eligible for inclusion in, the National Register of Historic Places (36 CFR 802(e)).

Federal undertakings include EPA's issuance of NPDES permits. The permit application submitted by DON did not address compliance with the NHPA. However, this issue is addressed in the 2014 draft SEIS for activities associated with the military relocation to Guam; the draft SEIS also notes the rich cultural heritage of Guam with numerous sites listed or eligible for listing on the NRHP. The SEIS notes that a programmatic agreement (PA)[34] was developed in 2011 to comply with the requirements of the NHPA for the relocation. The PA includes a

[34] Programmatic Agreement among the Department of Defense, the Advisory Council on Historic Preservation, the Guam State Historic Preservation Officer, and the Commonwealth of the Northern Marianas State Historic Preservation Officer Regarding the Military Relocation to the Islands of Guam and Tinian, March, 2011.

detailed process to ensure compliance with the NHPA for activities associated with the relocation. Region 9 believes that the PA also provides an appropriate mechanism for ensuring compliance with the NHPA for activities undertaken to ensure compliance with the NPDES permit (such as construction of stormwater retention facilities) that may fall outside the scope of the relocation. Part 4.4 of draft permit includes a requirement to follow the procedures in the PA for such activities.

6.4 Magnuson-Stevens Fishery Conservation and Management Act.

In accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, Federal agencies must consult with NMFS regarding any of their actions authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken that may adversely affect essential fish habitat (EFH). Upon review, EPA has determined that issuance of this draft permit will have no adverse effect on EFH. Any effects of this permit on EFH would be beneficial by imposing restrictions, including management practices, on the discharges authorized by the permit. Prior to issuance of the MS4 permit, the discharges have occurred without restrictions. Region 9 has provided NMFS with a copy of the draft permit and fact sheet for review and comment on Region 9's tentative conclusions concerning potential effects on EFH.

6.5 Executive Order: Environmental Justice

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has developed an environmental justice screening tool (EJSCREEN, available at: http://www2.epa.gov/ejscreen) to help evaluate the potential impact of permitted facilities such as the MS4 and other permitted facilities within the immediate area on local residents. At the present time, however, the screening tool is unable to provide this type of evaluation for Guam. Nevertheless, EPA believes that the MS4 permit will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population.

7. Standard Permit Conditions

NPDES regulations at 40 CFR 122.41 and 122.42 require the inclusion of certain standard conditions in all NPDES permits. The standard conditions that are proposed for the DON MS4 permit are found in Appendix B of the draft permit.

Region 9 normally includes these conditions in all NPDES permits, and we also include certain other basic conditions which set forth additional requirements of the CWA. However, based on experiences with MS4 permits in Arizona, and in consideration of the unique nature of stormwater discharges, Region 9 has made a relatively minor clarification in the definition of a "bypass" in standard condition 13.a.1. The Arizona permittees had expressed concern that bypasses consistent with the normal operation of an MS4 might be considered bypasses prohibited by the permit. Region 9 added a clarification that such bypasses would not be considered violations of the permit. We do not believe that this clarification significantly affects the intent of the standard conditions.

8. Expiration Date of the Draft Permit

The expiration date of the proposed permit is _____, 2021.

Appendix A – Region 9 Designation Memorandum

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

February 8, 2011

MEMORANDUM

SUBJECT: Request for Designation of MS4 Discharges on the Island of Guam for NPDES Permit Coverage

FROM: David Smith, Manager
NPDES Permits Office (WTR-5)

Charlotte Withey
Office of Regional Counsel (ORC-2)

THRU: Alexis Strauss, Director
Water Division (WTR-1)

Nancy Marvel, Regional Counsel
Office of Regional Counsel (ORC-1)

TO: Jared Blumenfeld, Regional Administrator

This memorandum recommends designation of the stormwater discharges from all municipal separate storm sewer systems (MS4s) on the Island of Guam for National Pollutant Discharge Elimination System (NPDES) permit coverage.

Pursuant to section 402(p)(2)(E) and (6) of the Clean Water Act (CWA), and 40 CFR § 122.26(a)(9)(i)(D), the EPA Regional Administrator may designate additional stormwater discharges as requiring NPDES permits where he determines that "the discharge, or category of discharges within a geographic area, contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States."

For the reasons outlined below, we conclude that stormwater discharges from MS4s serving the Island of Guam contribute to violations of water quality standards and are a significant contributor of pollutants to waters of the United States. We therefore recommend designation of stormwater discharges from all MS4s serving the Island of Guam.

I. Legal Background

As part of the Water Quality Act of 1987 (WQA), P.L. 100-4 (Feb. 4, 1987), Congress required EPA to establish permitting requirements for certain stormwater discharges, including discharges from large and medium MS4s. (WQA § 405, codified as CWA § 402(p), 33 U.S.C. § 1342(p)). Congress also gave EPA authority to designate additional stormwater discharges for permitting on a case-by-case basis. *Id.*

A. Current Status of MS4s on Guam under the NPDES Stormwater Regulations

There are currently no regulated MS4s on Guam. EPA's Phase I stormwater regulations (55 FR 47990, November 16, 1990) required NPDES permits for large and medium MS4s, as defined at 40 § CFR 122.26(b)(4) and (7). The regulations included a list of incorporated places (cities) and counties which qualified as large or medium MS4s and required an NPDES permit. (40 CFR § 122, Appendices F through I). Guam has no "counties" or "incorporated places," as defined by the Census Bureau.[1] Thus, no areas of Guam qualified as medium or large MS4s under the Phase I regulations.

EPA's Phase II stormwater regulations (64 FR 68722, December 8, 1999) added a requirement for permitting of small MS4s[2] that are either located in an "urbanized area" under the latest Decennial Census or otherwise designated by the NPDES permitting authority. 40 CFR § 122.32(a). On May 1, 2002 (67 FR 21962), the Census Bureau published a list of urbanized

[1] *See* Census Bureau, Geographic Areas Reference Manual (Nov. 1994) at 7-19 thru 7-22, available at http://www.census.gov/geo/www/garm.html.

[2] "Small MS4" is defined as all separate storm sewers that are:

> (i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.
> (ii) Not defined as "large" or "medium" municipal separate storm sewer systems pursuant to paragraphs (b)(4) and (b)(7) of this section, or designated under paragraph (a)(1)(v) of this section.
> (iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

40 CFR 122.26(b)(16).

areas based on the 2000 census.[3] Hagåtña, Guam was included on the list of urbanized areas with a population of 132,000, and ordinarily this would have triggered a requirement for an NPDES permit for the MS4 serving this area. However, on August 23, 2002 (67 FR 54631), the Census Bureau reclassified Hagåtña as urban clusters.[4] As a result, the Hagåtña MS4 no longer required an NPDES permit in accordance with the Phase II regulations. It should be noted, however, that the reclassification was simply a result of the Census Bureau's decision not to apply its criteria for urbanized areas to Guam.[5]

B. Standard for Designation

Small MS4s may be designated for NPDES permits pursuant to three different provisions of the stormwater regulations.

Pursuant to 40 CFR §§ 122.26(a)(9)(i)(A), 122.32(a)(2) and 123.35(b), small MS4s may be designated based upon a determination that a stormwater discharge from the small MS4 "results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts." 40 CFR § 123.35(b)(i).

Under 40 CFR § 122.26(a)(9)(i)(C), stormwater discharges may be designated where the Regional Administrator determines "that stormwater controls are needed for the discharge based on wasteload allocations that are part of "total maximum daily loads" (TMDLs) that address the pollutant(s) of concern . . ." 40 CFR § 122.26(a)(9)(i)(C).

Finally, under 40 CFR § 122.26(a)(9)(i)(D), the Regional Administrator may designate a stormwater discharge or category of discharges where he determines that: "the discharge, or category of discharges within a geographic area, contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States."

While this memorandum proposes designation only pursuant to 40 CFR § 122.26(a)(9)(i)(D), reference is made to the other designation provisions in order to inform the application of § 122.26(a)(9)(i)(D) to the facts in this case.

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[3] For Census 2000, the Census adopted the following definition of an urbanized area: "contiguous, densely settled census block groups (BGs) and census blocks that meet minimum population density requirements, along with adjacent densely settled census blocks that together encompass a population of at least 50,000 people." 67 Fed. Reg. 11663, 11667.

[4] For Census 2000, the definition of an "urban cluster" is identical to that of an "urbanized area" except that the population of a cluster is at least 2,500 people, but fewer than 50,000 people." *Id.*

[5] Pursuant to an agreement between the Census Bureau and the government of Guam, "all urban areas defined within Guam based on the results of Census 2000 are designated as urban clusters regardless of their total population." 67 FR 54631.

An EPA memorandum entitled *Designation of Stormwater Discharges for Immediate Permitting* (August 8, 1990), available at: http://cfpub.epa.gov/npdes/pubs.cfm?program_id=6) (Designation Memo) provides guidance on designations of stormwater discharges for permitting. Although the Designation Memo was written prior to the promulgation of the Phase I and II regulations, the current standard for making a designation under 122.26(a)(9)(i)(D) is virtually identical to the standard provided for in CWA § 402(p)(2)(E), upon which the Guidance was based. The only substantive difference between the two is that section 122.26(a)(9)(i)(D) allows for designation of a "category of discharges within a geographic area" as well as designation of individual stormwater discharges, whereas section 402(p)(2)(E) only provides for the latter. Despite this difference, the Designation Memo still provides useful guidance on the appropriate factors to be considered when making a designation.

The Designation Memo recommends immediate designation of any discharges known or suspected to:

1. contribute to a violation of a water quality standard for a waterbody segment listed under section 304(l)(1)(B), or contribute significant amounts of pollutants to any waterbody segment listed under sections 304(l)(1)(A), 319(a)(1), or 314(a)(1)(F);
2. contribute significant amounts of pollutants to waters of the United States, including sensitive wetlands, drinking water sources, estuaries, lakes, scenic rivers/streams, or near coastal areas that are highly valued natural resources**;**
3. originate from municipal separate storm sewer systems that have, or are suspected of having, process waste or sanitary wastes discharged to them; or
4. originate from municipal separate storm sewer systems that are suspected of containing a significant contribution of pollutants.

Designation Memo at 3-4.

Further guidance on appropriate factors to be considered in designating MS4s for NPDES permitting in particular is provided by the Phase II regulations at 40 CFR § 123.35(b). As noted above, we do not specifically rely on this provision. Nonetheless, we believe it is appropriate to look at section 123.35(b)(1)(ii), EPA's recommended designation criteria for MS4s, as guidance. In particular, when examining "other significant water quality impacts", permitting authorities are advised to consider "discharge to sensitive waters, high growth or growth potential, high population density, contiguity to an urbanized area, significant contributor of pollutants to waters of the United States, and ineffective protection of water quality by other programs." 40 CFR 123.35(b)(1)(ii).

II. FACTUAL BACKGROUND

A. General Characteristics of Stormwater Discharges from MS4s

Discharges from MS4s are comprised primarily of urban stormwater.[6] Such discharges typically contain elevated concentrations of pollutants that collect on impervious surfaces, such as city streets, driveways, parking lots, and sidewalks. The first national assessment of urban runoff quality was undertaken for the *Nationwide Urban Runoff Program (NURP)* study in the late 1970s and early 1980s. Overall, data from the NURP study indicated that discharges from separate storm sewer systems draining runoff from residential, commercial, and light industrial areas carried more than 10 times the annual loadings of total suspended solids (TSS) than discharges from municipal sewage treatment plants that provide secondary treatment. The NURP study also indicated that runoff from residential and commercial areas carried somewhat higher annual loadings of chemical oxygen demand (COD), total lead, and total copper than effluent from secondary treatment plants, as well as high levels of bacteria during warm weather conditions. 65 Fed. Reg. at 68725. More recently, discharge monitoring data from medium and large MS4s has been compiled in the National Stormwater Quality Database (NSQD) (Pitt, et al. 2008).[7] Although the NQSD data indicate significant variations in pollutant loadings among different land uses, the data affirm the significance of discharges from MS4s as contributors of pollutants to waters of the United States. For example, the median TSS concentration for all samples was 62.0 mg/L, more than double the 30-day average limit of 30 mg/L for discharges from municipal sewage treatment plants that provide secondary treatment. The median fecal coliform concentration was 4300 mpn/100 mL, which exceeds the former National Recommended Water Quality Criteria (NRWQC) for bathing waters by an order of magnitude.[8]

B. General Water Quality Impacts of Urban Stormwater Discharges on Guam

The 2008 Integrated Report submitted by the Guam EPA pursuant to CWA sections 305(b), 303(d) and 314 (Guam EPA, 2008) provides an assessment of water quality in and around Guam, including current water quality impairments and sources which contribute to the impairments. The Integrated Report concludes that overall, stormwater runoff from urban areas

[6] The term "urban stormwater" is not defined by regulation, nor does it appear in the text of EPA's stormwater regulations. Consistent with EPA's usage in the preamble to the Phase I and II regulations, the term is used in this document to refer to runoff from urban areas, including residential, commercial, industrial and mixed-use areas, which is discharged through storm sewers. See, e.g. 64 Fed. Reg. at 68725.

[7] Available at http://unix.eng.ua.edu/~rpitt/Research/ms4/Paper/Mainms4paper.html .

[8] *See* EPA's Redbook, Quality Criteria for Water (July 1976) at 79, available at http://water.epa.gov/scitech/swguidance/waterquality/standards/current/index.cfm. EPA now recommends the use of enterococci, rather than fecal coliform, as a bacterial indicator, but there is insufficient data available on average levels of enterococci in urban stormwater to make a meaningful comparison between these levels and the current NRWQC for enterococci.

and construction sites is a significant contributor of pollutants to receiving waters (sections II.B.3.2 and II.B.3.4 of the Integrated Report). Further information on the overall water quality effects of urban stormwater on Guam is provided in the CNMI and Guam Stormwater Management Manual (Stormwater Manual) (Horsley Witten Group, Inc., 2006). The Stormwater Manual stresses the role of urban stormwater as a contributor of sediments (total suspended solids or TSS), nutrients (nitrogen and phosphorus), and pathogens (bacteria and viruses) to receiving waters in and around Guam.

The principal source of urban runoff in a given area is the MS4 given the definition of a municipal separate storm sewer at 40 CFR 122.26(b)(8); thus, the assessment in the Integrated Report concerning the effects of urban runoff supports the designation of the MS4s on Guam for stormwater permitting.

More information and specific water quality impacts of discharges from MS4s are discussed in section 0 below.

C. Planned Relocation of U.S. Marines to Guam from Okinawa

The DoD is currently planning to relocate approximately 8,600 U.S Marines and 9,000 dependents from Okinawa to Guam as part of an international agreement with Japan. Additional information is available in a final environmental impact statement (FEIS) prepared for the relocations (Navy, 2010b).[9] In addition, approximately 600 U.S. Army personnel and 900 dependents will be relocated. At the conclusion of the construction phase, the total population increase on Guam stemming from the relocation is estimated to be about 33,000 including military personnel, civilian military workers and workers in jobs induced by the relocation. At the height of the construction phase, the population increase is estimated at about 79,000. As noted above, the population of the urban area on Guam based on the 2000 census was 132,000; the 2000 census lists the total population of Guam as 155,000. As of 2009, the Government of Guam estimates total Island population at about 178,000.

The relocation will be accompanied by the construction of numerous new facilities (such as housing, retail, schools, utilities and training facilities) to accommodate the new personnel. New construction is expected both on and off-base. Substantial upgrades to the off-base road network on Guam will also be needed. A recent report (Parsons Transportation Group, Inc, 2010) describes the needed upgrades, which include widening and strengthening of existing roads in addition to construction of new roads. Both this construction and the ongoing intensified use of the road network would increase the quantity of pollutants discharged in stormwater from the roadways and the risks to receiving waters from the stormwater runoff.

[9] The FEIS and related documents are available at http://www.guambuildupeis.us/.

III. SCOPE OF PROPOSED DESIGNATION

As noted above, 40 CFR § 122.26(a)(9)(i)(D) allows for designation of a category of discharges within a geographic area, based upon a determination that the category "contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States." In this case, it is appropriate to designate all discharges from MS4s, as defined at 40 CFR § 122.26(b)(18), on Guam.[10] The area covered by this designation will generally coincide with areas on Guam that are urban in character, but will extend somewhat beyond the urbanized clusters as delineated by the 2000 Census. In addition, since the designation is intended to cover future MS4s as well as existing MS4s, it will include MS4s serving all future publicly owned and/or operated storm sewer systems defined as small MS4s, such as storm sewer systems to be constructed to serve new or expanded DoD facilities, and associated road networks.

The inclusion of areas of new development (i.e., future MS4s) outside of the existing urbanized clusters in the designation is important because much of the new development on the island, including many of the new DoD facilities, is expected to be located outside the existing urban clusters and would not be subject to the permit if the designation were limited to the current urban clusters. Attachment 1 shows the urban area for Guam as determined by the Census Bureau. This map also shows other urban areas as identified by the Government of Guam, existing military facilities, major roads, and rivers, streams and marine waters with impaired water quality. Attachment 2 shows the anticipated future land use in northern and central Guam (Guam Bureau of Statistics and Plans, 2009a), and Attachments 3A and 3B shows the existing and proposed military facilities on Guam. A comparison of these maps shows much of the anticipated new development is expected to occur outside the urban clusters delineated by the Census Bureau. As discussed above, the Integrated Report concluded that urban runoff which is discharged from Guam's MS4s is a significant source of pollutants to local receiving waters, and it is important to address the discharges from the new MS4s as well as the existing MS4s. As illustrated in Attachment 1, impaired waters are located in and adjacent to urban clusters as defined by the Census Bureau, and in many other areas of Guam further from these urban clusters. This map illustrates the importance of addressing all MS4s, and not just MS4s in existing urban clusters, to protect and restore Guam's impaired waters.

IV. BASIS FOR DESIGNATION

While relatively little water quality information has been collected on Guam, the available data indicate that stormwater discharges from MS4s both (1) contribute to violations of water quality standards and (2) are a significant contributor of pollutants to waters of the United States, pursuant to 40 CFR § 122.26(a)(9)(i)(D).

[10] Since there are no large or medium MS4s on Guam, all of the designated discharges would be considered small MS4s, as defined at 40 CFR § 122.26(b)(16)-(17).

A. Contribution of Discharges from MS4s to Violations of Water Quality Standards on Guam

As noted above, Guam's Integrated Report lists numerous beaches and coastal areas on the CWA section 303(d) list of impaired waters due to the exceedances of bacteria standards (see Attachment 1). On March 17, 2010, EPA approved the Guam Northern Watershed Bacteria TMDLs (GNWB TMDL),[11] which are intended to address exceedances of water quality standards for bacteria which are currently occurring at seventeen of Guam's most popular recreational beaches. (Tetra Tech, Inc., 2009). The GNWB TMDL notes that stormwater runoff contributes to the impairment of all seventeen GNWB beaches. (GNWB TMDLs Table 5-2 at 21). Although the exact contribution of stormwater discharges varies among the individual beaches, the GNWB TMDLs emphasize the central role that stormwater discharges play in causing exceedances of the geometric mean (chronic) water quality criterion for bacteria and recommends that, "[e]fforts to achieve Northern Guam Beach TMDL targets based on the geometric mean should focus on storm water discharges to Hagåtña Bay." (GNWB TMDL at 24).

The GNWB TMDL does not distinguish among different types of unpermitted stormwater discharges, so it is not possible to ascertain the exact contribution of discharges from MS4s, as opposed to nonpoint source discharges.[12] However, the TMDL explicitly points out the absence of MS4 permitting requirements on Guam and notes that, "[d]esignation of the urban portions of Guam to be subject to NPDES MS4 permit requirements is an option that would strengthen the stormwater management program relative to TMDL implementation." (GNWB TMDL at 216).

Similarly, the monitoring results reported in the Integrated Report show exceedances of bacteria standards at monitoring stations both adjacent to the Hagåtña urban clusters and at other locations with MS4s as well. Appendix A of the Integrated Report shows the locations of Guam EPA's recreational beach monitoring stations. Some locations with exceedances (e.g., Tumon Bay) are adjacent to the Hagåtña urban clusters, but exceedances are also commonly reported at locations adjacent to MS4s outside this area (e.g., Inarajan Bay, Merizo Pier and Togcha Beach), which are adjacent to the MS4s serving the communities of Inarajan, Merizo, and Agat (see

[11] The official title of the GNWB TMDLs is "DRAFT Development of Guam Northern Watershed Bacteria TMDLs" (Dec. 16, 2009), available at http://www.epa.gov/waters/tmdldocs/Guam_NW_Beach_TMDL_--_2009-12-16_%20jtc.pdf. EPA approved the GNWB TMDLs on March 17, 2010. *See Letter from Alexis Strauss to Lorilee Chrisostomo* (March 17, 2010). Although they are technically seventeen distinct TMDLs, they are referred to collectively as the GNWB TMDL in this document.

[12] In addition, the GNWB TMDL does not specify whether unpermitted point source stormwater discharges are subject to waste load allocations (WLAs) or load allocations (LAs). However, because the TMDL assigns the same concentration-based values to all WLAs and LAs, the actual concentration limits are the same regardless of the form of allocation.

Attachment 1). These results provide support for the broad geographic designation, as described above, of all MS4 discharges on Guam.

On November 12, 2010, EPA published an update[13] to its 2002 guidance memorandum concerning the incorporation of requirements of TMDLs for stormwater discharges into NPDES permits. Among other new recommendations, the updated memorandum expresses concern NPDES permitting authorities have only rarely used the designation authority provided by the CWA and NPDES regulations to permit and more effectively control pollutants in stormwater discharges which are significant enough to be assigned a load allocation in a TMDL, but are not otherwise subject to NPDES permitting under existing regulations. As described above, this is the situation for the stormwater discharges covered by the GNWB TMDL, and designation would be consistent with the guidance in the November 12, 2010 updated memorandum. This memorandum also clarifies stormwater discharges which may be considered loads allocations in a TMDL would be reclassified as wasteload allocations once they become subject to an NPDES permit.

B. MS4s on Guam as a Significant Contributor of Pollutants to Waters of the United States

In addition to identifying that discharges from MS4s on Guam are contributing to violations of bacteria standards on Guam, the available data also indicate that these discharges are collectively a significant contributor of pollutants to U.S. waters.

The most comprehensive study of stormwater pollutant loadings on Guam was conducted during the 1970s (Zolan, *et al.*, 1978a, Zolan, 1981). Urban runoff was collected over an 18-month period from ponding basins and storm drains at various locations in northern Guam and analyzed for common water quality parameters. Overall, the study concluded that urban runoff discharging into coastal areas contained (1) high levels of solids and chlorides, (2) levels of total and fecal coliform bacteria exceeding the GWQS,[14] and (3) concentrations of nitrate-nitrogen exceeding the GWQS nitrogen limit for nearshore waters. As noted earlier, the 2008 Integrated Report concludes stormwater discharges from MS4s continue to contain significant loadings of pollutants which are discharged to Guam's receiving waters.

A more recent study (Denton, *et al*., 1998) focused on loadings of nutrients (nitrogen and phosphorous) and heavy metals in stormwater collected from various retention sites and one storm drain servicing a hotel in northern Guam. Despite significant spatial and temporal variations, the study found overall relatively low loadings of nutrients and heavy metals in the stormwater retention sites (in comparison to sampling results elsewhere in the world). However, samples taken from the hotel storm drain were "generally enriched in all detectable components" with some samples containing particularly high levels of phosphorus (up to 482 mg/l), which may result from landscaping practices or other activities at the hotel. In the 1998 report and in subsequent publications (Denton, *et al*., 2005, 2007), the authors proposed that phosphorus

[13] Updated memorandum dated November 12, 2010 is available at: http://cfpub.epa.gov/npdes/whatsnew.cfm?program_id=6

[14] The current GWQS use enterococci rather than fecal or total coliform as a bacterial indicator for all marine waters.

discharges from hotel runoff may be a significant factor contributing to algal blooms in Tumon Bay. However, the authors also noted that most hotels along the bay discharge their stormwater to infiltration chambers rather than directly to waters of the United States or the MS4; phosphorus reaches Tumon Bay via groundwater transport from the infiltration basins. Nevertheless, the data provide an indication of the types and concentrations of pollutants present in urban stormwater on Guam generally and in runoff from landscaped areas in particular.

C. Other Considerations

There are several other considerations that weigh in favor of designation of stormwater discharges from MS4s on Guam. As noted in section 0 above, EPA guidance recommends consideration of various factors in determining whether to designate an MS4 discharge for permitting. Of particular relevance to Guam are the following factors: discharge to sensitive waters, high growth or growth potential, contiguity to an urbanized area, and significant contributor of pollutants to waters of the United States. The overall significance of discharges from MS4s as a contributor of pollutants is discussed in section 0 above. The remaining factors are addressed below.

1. Sensitive Receiving Waters

Coral reefs surround nearly the entire Island of Guam and are "extremely valuable in terms of marine life, aesthetics, food supply, recreation and protection of Guam's highly erodible shorelines." (Integrated Report, Executive Summary at 2). The Government of Guam in its Coral Reef Initiative (see http://allislandscorals.org) has stated the Island's coral reefs are under stress and recommends better control of land-based sources of pollution including stormwater runoff. In a summary report on the status of coral reefs around Guam, the Guam Bureau of Statistics and Plans concludes the top threats to Guam's reefs include sedimentation from upland soil erosion and stormwater runoff and associated pollutants (Guam Bureau of Statistics and Plans, 2009b). Sediment from stormwater runoff can smother coral while excess nutrients and freshwater itself can interfere with the life cycle of coral (Guam Bureau of Statistics and Plans, 2008). The CNMI and Guam Stormwater Management Manual (Stormwater Manual)(Horsley Witten Group, Inc., 2006) also indicates sediment from stormwater runoff is the most significant threat to the coral reefs around Guam.

As described in section II.A above, discharges of stormwater from MS4s typically contain high levels of sediment. It is therefore highly probable that stormwater discharges from MS4s on Guam are contributing to the sedimentation of coral reefs around Guam. The fact coral reefs "surround" almost the entire Island also firmly supports a broad geographic designation of the

MS4s on the Island (including developing areas and the full existing MS4) to ensure adequate control of pollutants in stormwater discharges to protect the corals.

2. High Growth Potential

As noted above, the proposed military relocation is expected to temporarily increase the population of Guam by 79,000 at the height of the construction phase, and to permanently increase the population by about 33,000. This would constitute a substantial increase to Guam's current population of about 178,000 and clearly makes Guam an area of "high growth potential."

The relocation would also be accompanied by a large construction program. The Main Cantonment area alone for the Marines (the area where housing, retail, schools and similar facilities would be located) would be about 2,500 acres in size. Construction site runoff from sites disturbing one or more acres on Guam is regulated under EPA's general NPDES permit for construction sites (73 FR 40338, July 14, 2008); see: http://cfpub.epa.gov/npdes/stormwater/const.cfm. An NPDES permit issued for the MS4s on Guam would enhance the effectiveness of the sediment and erosion control program on Guam by requiring the MS4s to impose a program to control pollutants in construction site runoff within the permitted area. The authorities with jurisdiction over these MS4s are uniquely placed to impose requirements to ensure the reduction of pollutant loadings that are expected to accompany this development during construction. Given the concerns noted in the Integrated Report regarding construction site runoff, this factor provides further support for the designation.

3. Contiguity

The locations of the existing and proposed military facilities in relation to the existing urban clusters identified by the Census Bureau and other urban areas on Guam can be seen by comparing the map in Attachment 1 with Figures 1.2-1 and 2.1-1, respectively, in the FEIS (also reproduced in Attachments 3A and 3B). The maps also show that all the other existing and proposed facilities are either adjacent to the urban area on Guam, or in close proximity, including the largest facilities such as the existing Apra Naval Base, Anderson AFB and the proposed Main Cantonment area for the Marines. This contiguity can be expected to compound the effects of the discharges from the urban areas, the military facilities and associated street and road networks.

In particular, stormwater discharges from these newly developed areas will not only contribute pollutant loadings during the construction phase, but will also continue to contribute pollutants once built out. Designation early in the development process will enhance pollutant removal potential, as it is also widely recognized there is greater potential for incorporating stormwater BMPs into new developments than in retrofitting BMPs into developed areas (55 FR 48055, November 16, 1990).

D. Additional Benefits of Designation

Groundwater is the principal source of drinking water on Guam, and is therefore another highly valued resource. Stormwater Management Manual at 1-17. Given the highly permeable soils overlying the principal aquifer (the North Guam Lens Aquifer which provides 70-80% of Guam's water supply and has been designated a sole source aquifer), the Manual stresses the importance of avoiding contamination of the aquifer as a result of infiltration of contaminated stormwater. The Navy in its FEIS for its Mariana Islands Range Complex (Navy, 2010a) argues implementation of the stormwater pollution prevention plan at Anderson AFB (which overlies the aquifer) has prevented extensive groundwater contamination. Nevertheless, the FEIS notes some wells were contaminated volatile organic compounds such as trichloroethylene and tetrachloroethylene, demonstrating the risks of groundwater contamination by surface water pollution should not be discounted.

Stormwater management under the NDPES permit program may consider potential effects of discharges to surface waters, and also the potential effects on groundwater resources, especially in areas with highly permeable soils such as those in Northern Guam, or when management techniques such as infiltration are used to minimize pollutant discharges to surface waters (see EPA's menu of stormwater best management practices (BMPs) at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm). Guam's 2008 Integrated Report cites urban runoff as one of the major threats to groundwater resources on Guam. We expect the MS4 permit would result in additional attention given to the potential effects of urban runoff on groundwater resources in Guam (and additional efforts to mitigate the effects), and thereby better ensure the protection of Guam's important groundwater resources.

V. DESIGNATION PROCEDURE AND PERMIT APPLICATION EQUIREMENTS

Since there are a relatively small number of permittees, we believe individual permits are appropriate; the likely permittees would be Guam Department of Public Works for the non-DoD areas of the Island, while DoD agencies (the U.S. Navy and possibly other agencies as well) would be the permittees for the DoD facilities.

The statutory and regulatory provisions governing issuance and review of individual permits and related actions provide guidance as to the procedures for issuing residual designations and associated permits. Based upon these provisions, we recommend that the Regional Administrator simultaneously (1) provide public notice and take comment on a "preliminary residual designation" (this document) and (2) specifically notify and provide permit application forms to the operators of the preliminarily-designated discharges. The operators of designated discharges would then need to submit permit applications within 180 days of the receipt of this notice, unless permission for a later date is granted by the Regional Administrator. 40 CFR §§ 122.26(a)(9)(iii) & 124.52(c). After receipt of these applications, the Region would issue and take comment on draft individual permits for designated discharges under 40 CFR § 124.6(d). The comment period on the preliminary residual designation would remain open through the close of the comment period on the individual permits. The Region would then issue a final residual designation and final permits to designated dischargers, along with response to

comments. 40 CFR §§ 122.26(a)(9)(i)(C) & (D), 124.15 & 124.17. Designated dischargers (or other interested parties who commented on the preliminary designation and/or draft permit(s)) could then petition the Environmental Appeals Board (EAB) for review of the designation, the determination to require individual permits and/or the permits themselves. 40 CFR §§ 124.19(a) & 124.52(c).

Since the facilities to be permitted in this case are essentially Phase II MS4s, the permit application regulations for Phase II MS4s at 40 CFR § 122.33(b)(2)(i) provide appropriate permit application requirements; these requirements include:

1. A storm water management program (SWMP) including BMPs addressing each of the six minimum control measures set forth at 40 CFR § 122.34(b)(1) through (6), designed to reduce the discharge of pollutants to the maximum extent practicable and protect water quality;
2. Measurable goals for each of the BMPs proposed for the SWMP including, as appropriate, the time frame for implementation of the BMPs;
3. An estimate of the square mileage served by the small MS4; and
4. The person or persons responsible for implementing or coordinating the SWMP.

The permit applications must also include the information required by 40 CFR § 122.21(f) (see Attachment 4).

We anticipate requesting submittal of the applications within 180 days of notification in accordance with 40 CFR § 122.52(c). After receipt of the permit applications, we will prepare and public notice draft NPDES permits for the discharges. Permit requirements will be developed to address the impacts of the discharges on the water resources of Guam. Following review of public comments, we would issue final permits and finalize the designation.

VI. CONCLUSION

For the reasons outlined above, we believe this proposed designation is appropriate under the CWA and its implementing regulations, and therefore recommend your approval. Upon approval of the designation of the stormwater discharges specified above for an NPDES permit, Region 9 will notify the dischargers that their discharges have been preliminarily designated, and require permit applications in accordance with 40 CFR § 124.52.

VII. AUTHORIZING SIGNATURE

Based on the analysis set forth in this memo, it is my preliminary determination that stormwater discharges from MS4s serving the Island of Guam contribute to violations of water quality standards and are a significant contributor of pollutants to waters of the United States. I am therefore issuing a preliminary residual designation of these discharges pursuant to section 402(p)(2)(E) and (6) of the Clean Water Act and 40 CFR § 122.26(a)(9)(i)(D).

February 8, 2011 /s/

Date Approval: Jared Blumenfeld, Regional Administrator

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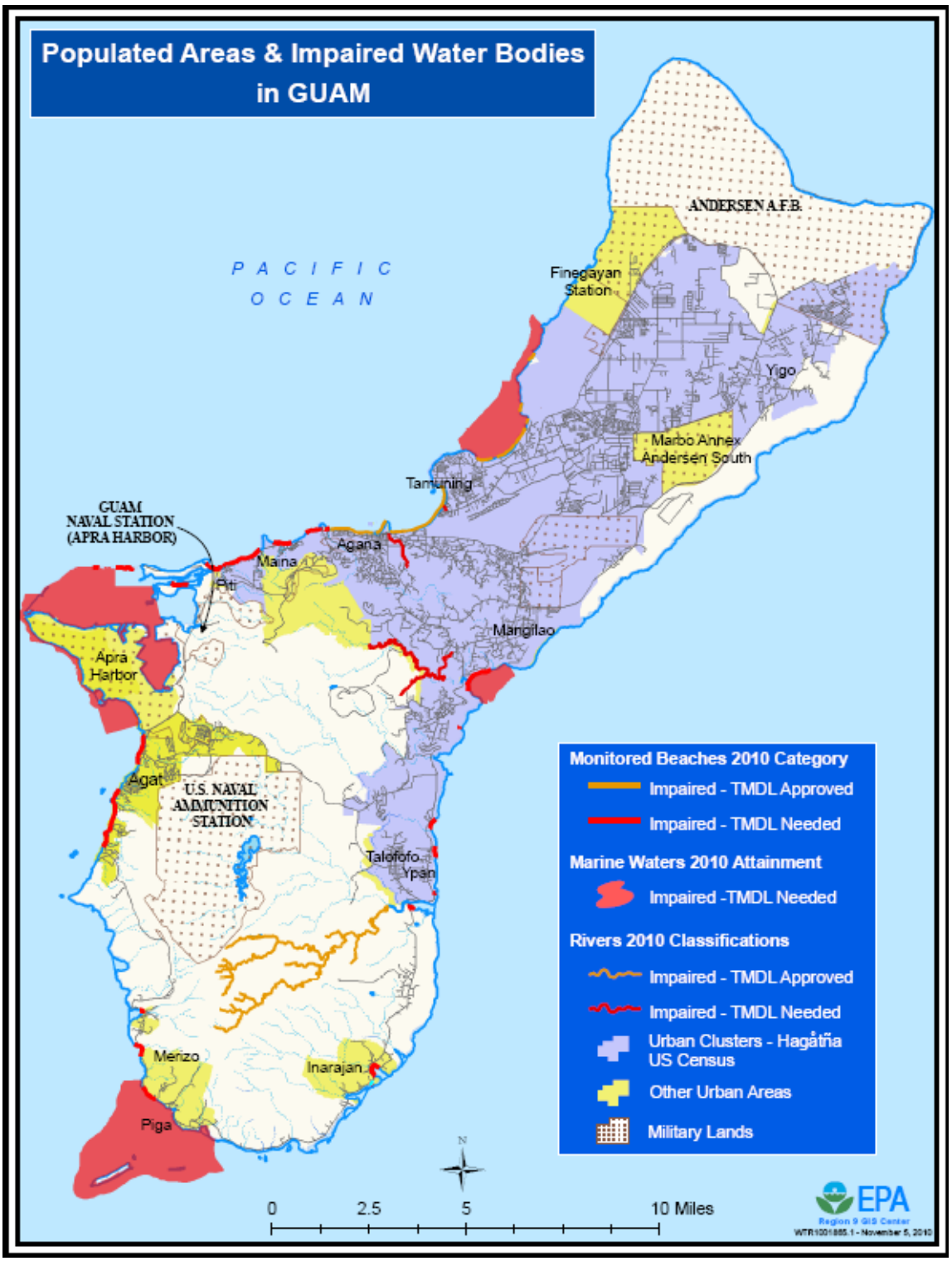
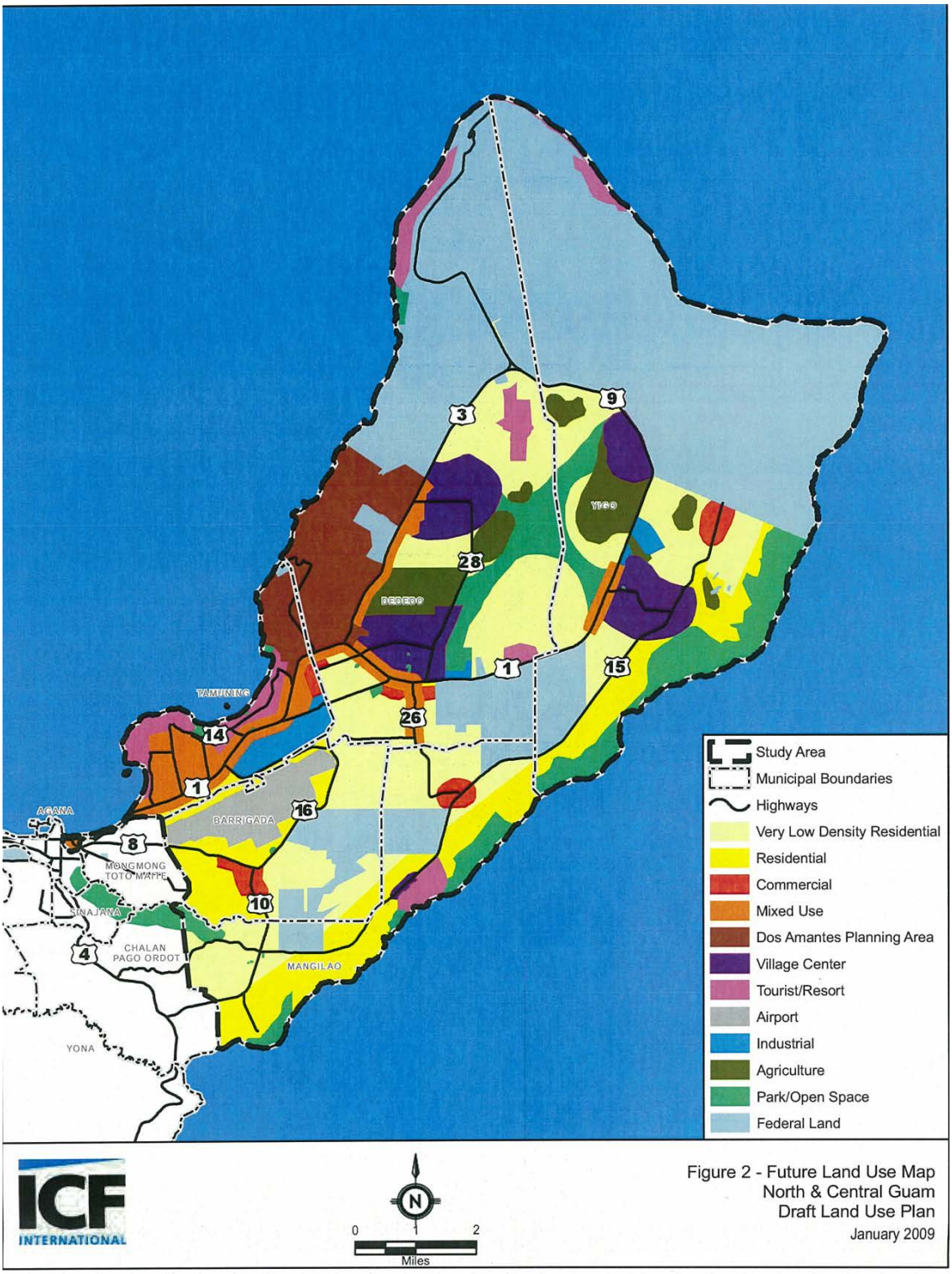
Attachment 1



Attachment 2 - Future Land Use in Northern and Central Guam
(Guam Bureau of Statistics and Plans, 2009)



Attachment 3 – Military Facilities on Guam Designated for MS4 Permitting

The FEIS accompanying DoD's proposed relocation of U.S. Marines from Okinawa to Guam includes a list of existing and proposed military facilities on the Island. These facilities are all designated for NPDES permitting as MS4s. The list of existing and proposed facilities follows below. Figure 1.2-1 from the FEIS (Attachment A) shows the locations of the existing facilities; Figure 2.1-1 from the FEIS (Attachment B) shows the locations of the proposed facilities.

I. Existing Facilities

A. Existing Navy Facilities

1) Naval Base at Apra Harbor
2) Naval Computer and Telecommunications Station (NCTS), Finegayan
3) Family housing/community support areas at Apra Heights, Nimitz Hill and NCTS, Finegayan
4) Sasa Valley and Tenjo Vista fuel farms
5) Naval magazine Apra Heights
6) Naval Hospital and adjacent high school
7) Military operations on urban terrain training range
8) Navy golf course at Barrigada

B. Existing Air Force Facilities

1) Anderson Air Force Base
2) Anderson South
3) Barrigada (Air Force)
4) Mount Santa Rosa communications facility

C. Existing Army Facilities

1) Training facility for Guam Army National Guard and Army reserves at Barrigada and Dededo

II. New Facilities

A. Main Cantonment Area

1) Headquarters and administrative areas
2) Base operations
3) Bachelor's Quarters and temporary lodging
4) Family housing
5) Educational facilities
6) Quality of life functions

B. Waterfront Area

1) Amphibious task force ship berthing
2) Embarkation and cargo ship inspection and staging area
3) LCAC/AAV laydown area
4) Apra Harbor medical/dental clinic
5) Military working dog kennels; USCG wharf and support facilities

C. Anderson AFB Area

1) Air embarkation
2) ACE beddown

D. Training Areas

1) Training range complex
2) Ammunition storage
3) Non-firing ranges
4) Aviation training
5) Command, control and simulation

Attachment 3A – Existing Military Facilities on Guam

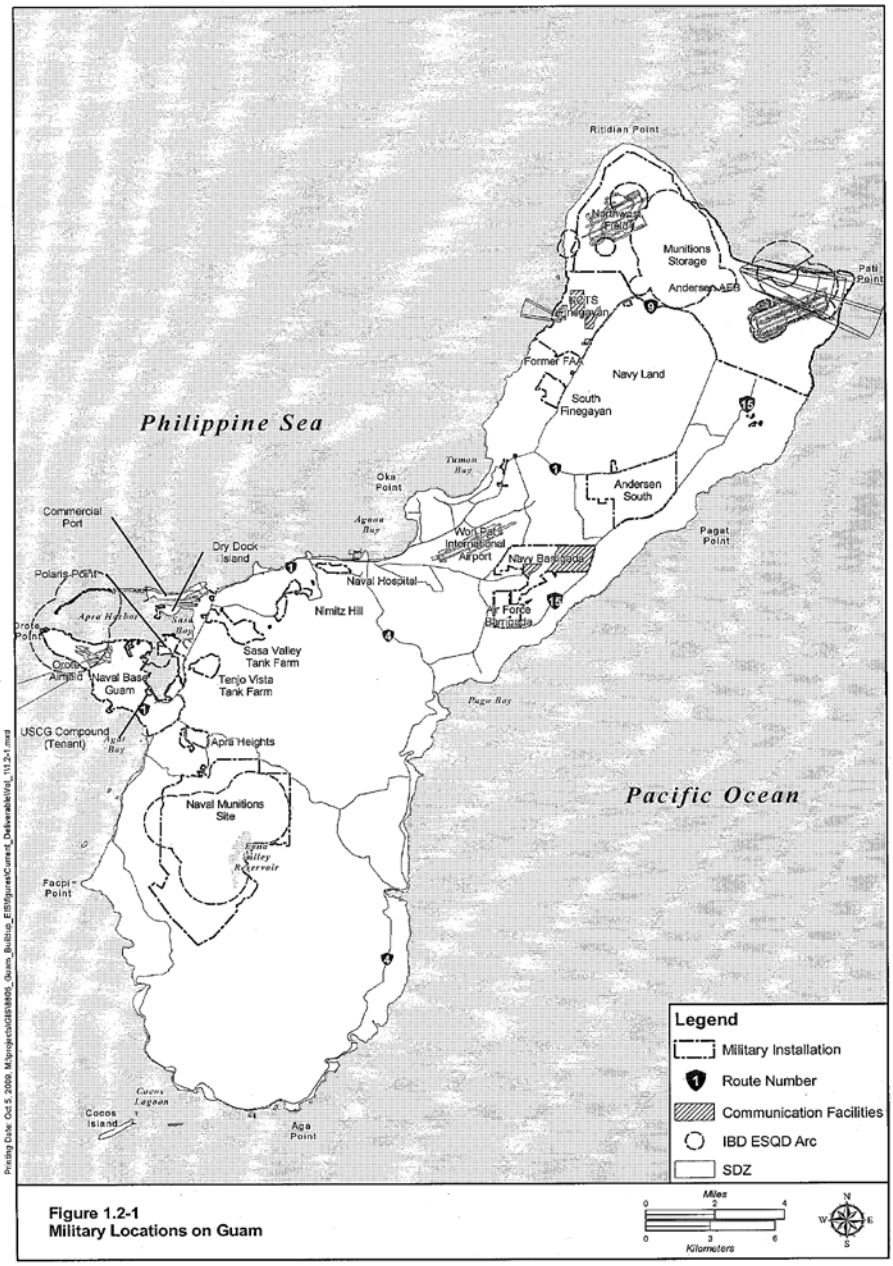


Figure 1.2-1
Military Locations on Guam

1-8

Attachment 3B – Proposed Military Facilities on Guam

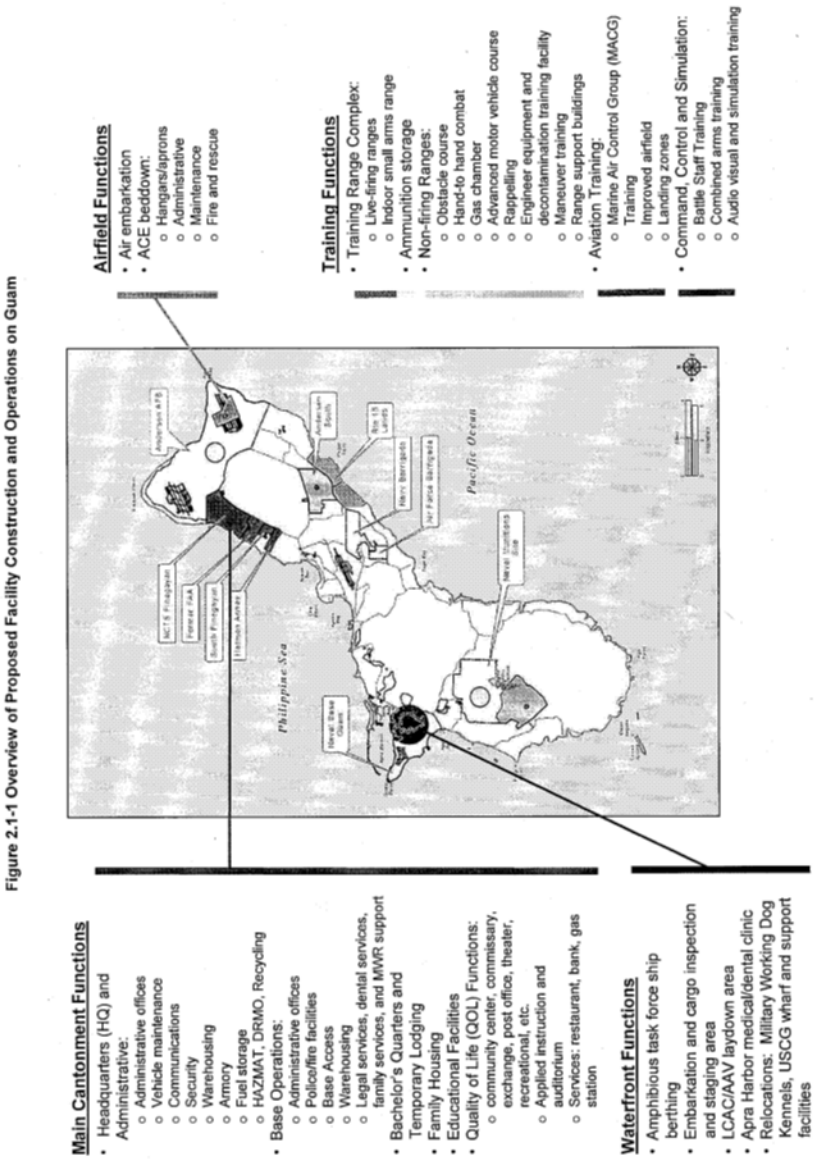


Figure 2.1-1 Overview of Proposed Facility Construction and Operations on Guam

2-4

Attachment 4 - Information Required by 40 CFR 122.21(f)

(1) The activities conducted by the applicant which require it to obtain an NPDES permit.

(2) Name, mailing address, and location of the facility for which the application is submitted.

(3) Up to four Standard Industrial Classification (SIC) codes which best reflect the principal products or services provided by the facility.

(4) The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity.

(5) Whether the facility is located on Indian lands.

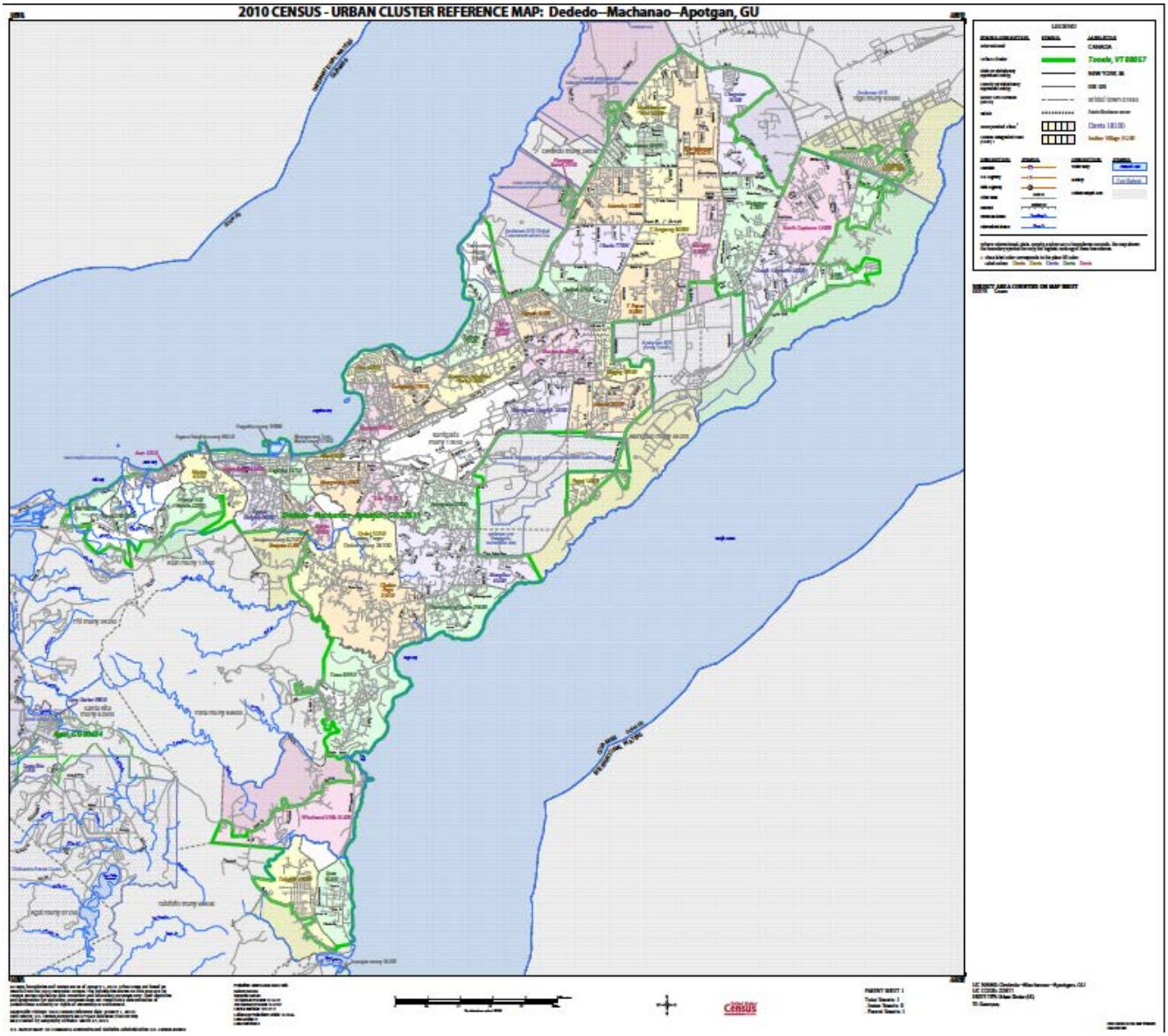
(6) A listing of all permits or construction approvals received or applied for under any of the following programs:

(i) Hazardous Waste Management program under the Resource Conservation and Recovery Act (RCRA).
(ii) Underground Injection Control (UIC) program under the Safe Drinking Water Act (SDWA).
(iii) NPDES program under the Clean Water Act (CWA).
(iv) Prevention of Significant Deterioration (PSD) program under the Clean Air Act (CAA)
(v) Nonattainment program under the CAA.
(vi) National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the CAA.
(vii) Ocean dumping permits under the Marine Protection Research and Sanctuaries Act.
(viii) Dredge or fill permits under section 404 of CWA.
(ix) Other relevant environmental permits, including State permits.

(7) A topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage, or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant in the map area.

(8) A brief description of the nature of the business.

Appendix B – Guam Urban Cluster (2010 Census)



Appendix C – DoD Existing Facilities on Guam

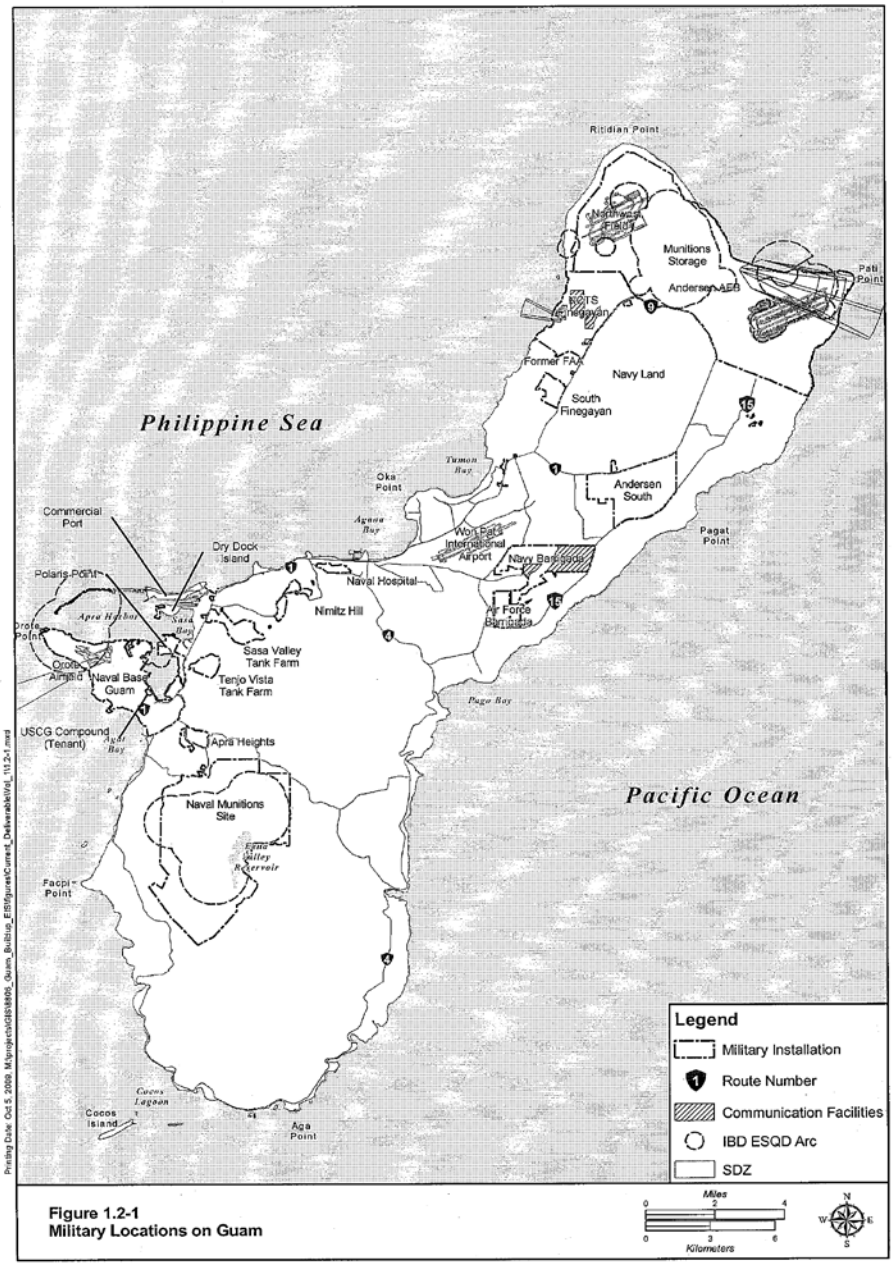


Figure 1.2-1
Military Locations on Guam

1-8

Appendix D – MS4 Permit Area

The DON MS4 permit area includes the following watersheds: Agat, Apra, Cetti, Dandan, Fonte, Geus, Hagåtña, Inaranjan, Mannell, Pago, Piti-Asan, Talayag, Talafolo, Toguan, Ugum, Umatac, and Ylig. In addition, the village limits of the village of Tamuming are included to the extent these limits extend northward beyond the boundaries of the Hagåtña watershed. The western tip of Navy Barrigada (shown in Appendix C) in the Hagåtña watershed is not included.