Fiscal Year 2024-28

CNMI NONPOINT SOURCE 5-Yr MANAGEMENT PLAN

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BECQ

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LIST OF ACRONYMS/ABBREVIATIONS

ACoE	Army Corps of Engineers
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BECQ	Bureau of Environmental and Coastal Quality
BMP	Best Management Practice
CNMI	Commonwealth of the Northern Mariana Islands
CSDP	Comprehensive Sustainable Development Plan
CUC	Commonwealth Utilities Corporation
CWA	Clean Water Act (Federal)
CZARA	Coastal Zone Act Reauthorization
DEQ	Division of Environmental Quality
DCRM	Division of Coastal Resources Management
DFW	Division of Fish and Wildlife
DLNR	Department of Lands and Natural Resources
DoD	Department of Defense
DPL	Department of Public Lands
DPW	Department of Public Works
DU	Clean Water Act Designated Use
EPA	Environmental Protection Agency
EJ	Environmental Justice
EQIP	Environmental Quality Incentive Program
FIB	Fecal Indicator Bacteria
GIS	Geographic Information System
GPS	Global Positioning System
IR	Integrated Report (CWA 305(d) and 303(d))
IWDS	Individual Wastewater Disposal System
IWMP	Integrated Watershed Management Plan
LiDAR	Light Detection and Ranging
MMT	Marine Monitoring Team

NCCA	National Coastal Condition Assessment
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
NRCS	Natural Resource Conservation Service
OPD	Office of Planning and Development
PDAC	Planning and Development Advisory Council
QC	Quality Control
SSG	Smart, Safe Growth
SVAP	Stream Visual Assessment Protocol
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
WEEC	Wastewater, Earthmoving and Erosion Control
WERI	Water Environmental Research Institute
WQS	Water Quality Standard
WQS/NPS	Water Quality Surveillance/Nonpoint Source (Branch)
YSI	YellowStone Instrument

MISSION

The overall mission of the Commonwealth of the Northern Mariana Islands (CNMI) Bureau of Environmental and Coastal Quality (BECQ)'s Non-Point Source (NPS) Program is:

"To achieve and maintain water quality standards (WQS) through the reduction of NPS pollutant contributions to CNMI's surface and groundwater."

This includes planning for and adaptation to climate change by improving and expanding stormwater management to reduce flooding, sedimentation and other sources of NPS pollution impacting coral reef health. CNMI's archipelago relies on healthy reef systems not only as a food source, but also for the tourist economy, the community's livelihood, and to protect the land from storm surges and other natural disasters exacerbated by climate change. The NPS program's mission supports agency and CNMI-wide efforts to achieve sustainable resource management are detailed further in the 2021-2030 Comprehensive Sustainable Development Plan (CSDP). That plan also details guiding planning and project implementation strategies including an integrated watershed management approach, and incorporates adopted watershed management plans for priority watersheds. These strategic plans and guidelines further support this 5-yr NPS Management Plan and are incorporated by reference, as well as being linked with in the document.

This plan also implements the CNMI's Coastal Nonpoint Pollution Control Program (Federally approved in 2003) in line with the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA).

The CNMI 5-yr NPS Management Plan has five main goals that are aligned with EPA's goals. These goals, areas of alignment, and current status are as follows:

Goal 1: Tackle the Climate Crisis

Objective 1.1: *Accelerate Resilience and Adaptation to Climate Change Impacts* – BECQ continues to work with the Department of Public Works (DPW), Department of Lands and Natural Resources (DLNR), Department of Public Lands (DPL), Office of Planning and Development (OPD), United States Environmental Protection Agency (USEPA), United States Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS), and the Army Corps of Engineers (ACoE) to support comprehensive systems management and leverage funds for constructing new or upgrading existing stormwater and other NPS Best Management Practices (BMPs) to make the islands' shorelines and reefs more resilient to impacts from runoff from the ever increasing frequency of storm events and their intensity.

Objective 1.2: *Advance key local agencies, International and Subnational Climate Efforts* – BECQ Program Managers exchange information and network with Guam, American Samoa, Federated States of Micronesia, Palau and other islands' natural resources managers and Non-Government Organizations (NGO) through the Micronesia Challenge Steering Committee at national and international conferences discussing how to leverage funding to address climate related issues that threaten the region. BECQ contributed to the 2021 Pacific Islands Regional Climate Assessment and CNMI's 2021-2030 CSDP is supporting the application of "Smart, Safe Growth" (SSG) guidance which includes a 3.2 meter sea level

inundation projection and tools to assess current environmental conditions into planning and project review. In early March 2020, BECQ established a Coral/Water Quality Workgroup consisting of DLNR/DFW, DEQ's WQS, and DCRM's Marine Monitoring Team. The workgroup with technical assistance from NOAA and the US EPA, met monthly to address water quality and nonpoint source related issues in the CNMI that affect coral. Given the general decline of corals in the CNMI since 2015, establishment of this workgroup was recognized as critical to better target BECQ staff capacity building, and the agency's monitoring and assessment capacities with the ultimate goal of protecting and restoring the corals of the CNMI. The workgroup is facilitated by the Department of Lands and Natural Resources (DLNR)'s Coral Restoration Coordinator and will continue to meet quarterly to prioritize achieving water quality standards specific to coral reefs. CNMI's restoration team participated in the IndoPacific Restoration Exchange workshop and network within the jurisdictions from Guam, American Samoa and Hawaii to compare challenges and future goals in terms of their techniques in hopes to establish coral-protective water quality efforts in the pacific region. CNMI's restoration team is currently working on the next steps in developing a restoration action plan over the next few months to fine tune the updated goals and objectives for that plan. Community feedback will be provided once the plan is completed.

Goal 2: Take Decisive Action to Advance Environmental Justice and Civil Rights

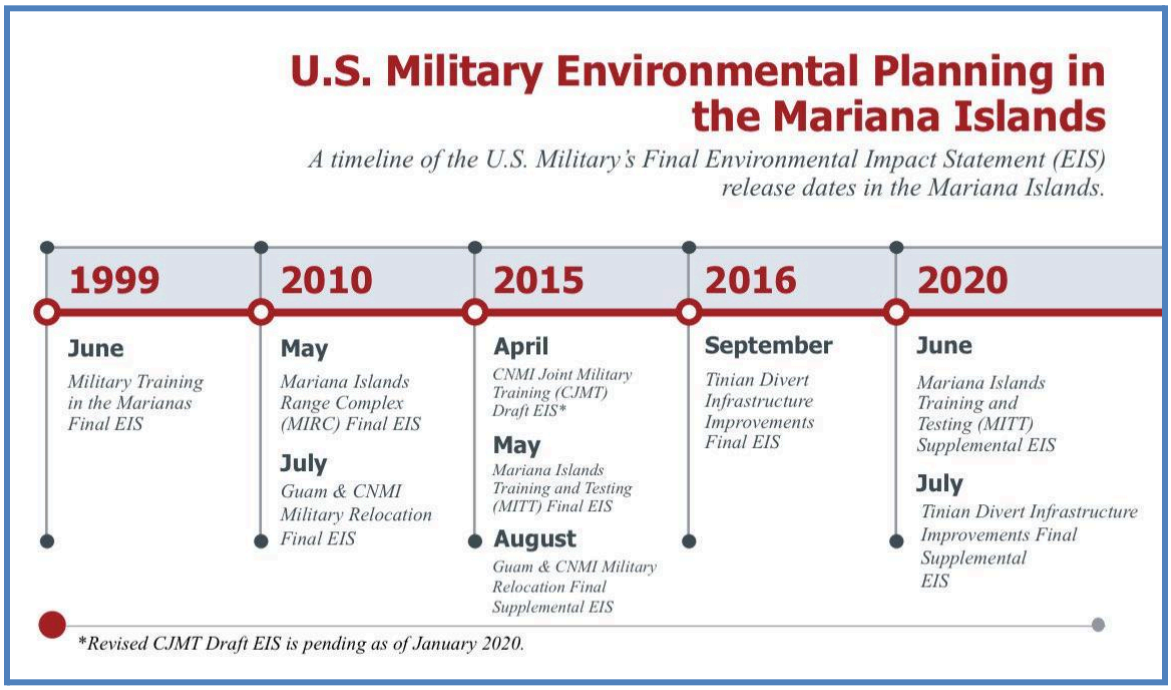
Objective 2.1: *Promote Environmental Justice and Civil Rights* – BECQ Managers have taken part in several Environmental Justice discussion panels to enlighten other US jurisdictions on the many challenges island communities face in order to provide food, security, and health care for residents, promote environmentally sustainable economic development, address supply chain issues as a small archipelago far removed from many national commerce trade routes, and to expand independent self-governance. As an active member of OPD's Complete Streets Working Group, BECQ is supporting efforts to mainstream complete streets planning principles that further community health and equity considerations into infrastructure maintenance and land use planning to promote improved sustainability and environmental justice outcomes.

Objective 2.2: *Embed Environmental Justice and Civil Rights into Programs, Policies, and Activities* – BECQ uses permitting programs and the Coastal Zone Management's Federal Consistency Reviews to protect CNMI lands, waters, and air from potential adverse impacts from proposed developments, including military expansion in the region. Equity and engagement considerations are included in SSG guidance, as the SSG assessment tool is integrated into CNMI's newly launched online permitting system. The CNMI is also included in EPA's EJScreen and other geospatial visualization tools, and provides feedback on their progress, and efforts to collect, communicate, and address environmental injustice and equity challenges.

Objective 2.3: *Strengthen Civil Rights Enforcement in Communities with Environmental Justice Concerns* - Considering the challenges of legacy contamination from past war campaigns, abandoned mechanic shops, and CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) sites, to the extent possible BECQ avails of the Formerly Used Defense Sites (FUDS) to clear lands of unexploded ordnance (UXO) and the Brownfields Grant Program to remediate other legacy pollutants to make way for new homestead lots for CNMI indigenous people. Program managers diligently review and comment

on all DoD Environmental Impact Statements (EIS) and scopes of work for periodic training and testing activities in efforts to protect fragile island resources from the increasing frequency of military training exercises in the Marianas and the military's demand for the use of more island resources throughout the archipelago and the Pacific region.

Figure 1. Military EISs Reviewed by BECQ for Comment (Source: Arriola, T., 2020)



Goal 3: Enforce Environmental Laws and Ensure Compliance

Objective 3.1: *Hold Environmental Violators and Responsible Parties Accountable* – BECQ's DEQ enforces **WQS, Earthmoving and Erosion,** Air, Hazardous Waste, Storage Tanks, Solid Waste, Wastewater, Surface water, Pesticides, and Ground and Drinking Water regulations with the assistance of the CNMI Attorney General's legal counsel.

Objective 3.2: *Detect Violations and Promote Compliance* – BECQ staff conduct inspections and carry out investigations whenever violations are in effect during their regular environmental monitoring efforts, or in response to citizen reporting. Findings are documented and penalties are imposed through enforcement proceedings to bring violators into compliance. To manage for NPS impacts DEQ's Wastewater Earthmoving and Erosion Control branch receives complaints through phone calls, emails and walk-ins regarding unpermitted earthmoving activities and/or wastewater issues such as sewer leaks and foul odors. Many of the violations are addressed appropriately before a fine is implemented.

Goal 4: Ensure Clean and Safe Water for All Communities

Objective 4.1: Ensure Safe Drinking Water and Reliable Water Infrastructure - BECQ works closely with Commonwealth Utility Corporation (CUC) and the Department of Public Works on sewer and stormwater management practices to protect the groundwater resources. The CNMI relies on groundwater for 100% of the drinking water produced in the CNMI. **Protecting the groundwater from nonpoint sources, sewer issues, and overall stormwater management improves drinking water safety, availability and delivery to all island residents.** In addition, OPD's *Built Environment Planning Task force* of which BECQ is a member, established numerous short-, mid-, and long-range objectives in the CSDP's that support clean water and sanitation for the island community (goal 6, Figure 2. below), and more sustainable use of marine (goals 14), and terrestrial resources (goal 15).

Objective 4.2: Protect and Restore Waterbodies and Watersheds - BECQ staff produce Integrated Watershed Management Plans (IWMP) for addressing the causes and sources of NPS pollution identified in the biennial CNMI 305(b) and 303(d) Water Quality Assessment Integrated Report (hereafter referred to as the "IR"). The IWMPs are written by engaging with resource agencies and other informed individuals living within the watershed to create projects to address the cause and source(s) of NPS pollution and ask for agency and community collaboration to prevent further detriment to watersheds and remediate impairments through planned strategies. Authors of these Plans evaluate local government and federal programs, laws, and regulations for their effectiveness, and to modify current programs to better protect and restore water quality. This is done in coordination with various funding agencies responsible for natural resource protection and watershed restoration efforts.

Goal 5: Safeguard and Revitalize Communities

Objective 5.1: Reduce Waste and Prevent Environmental Contamination through Community Outreach-DEQ WQS/NPS to continue to leverage resources and collaborate with other responsible agencies to raise public awareness urging local boaters in clean boating habits and using bilge socks to prevent accidental spills that may result in oil, gas or diesel fuel toxicity accumulating in a boat's bilge to the environment.

Objective 5.2: Prepare for and Respond to Environmental Emergencies-DEQ continues to take part in EPA-funded training certification opportunities that includes hands-on exercises that aims to improve preparedness in responding to typhoons and other significant impacts in the CNMI. DEQ dedicates an authorized representative from each branch to be actively involved in these types of training. WQS/NPS staff remains a secondary responder to critical environmental impacts. These activities ensure the protection of human health and the environment. WQS/NPS are also collaborating with lead agencies DCRM and DPS Fire in efforts to implement wildfire prevention education and outreach in high priority watersheds.

Objective 5.3: Promote Pollution Prevention- DEQ WQS/NPS to continue to partner with various local and federal government programs to help ensure the local community remains active in watershed decision making, monthly trash cleanups, village forums, hands-on activities, and environmental awareness to address nonpoint sources of pollution. Residents and businesses are offered technical

assistance for pollution prevention. The WQS/NPS **"Stream Dream Team"** works with communities living within impaired watersheds to restore stream ecosystems and to prevent further pollution from contaminating the surrounding marine ecosystems. BECQ also developed the CNMI Stream Visual Assessment Protocol (SVAP) to assess stream water quality (refer to Stream Dream Team).

Each of these goals have specific objectives and strategies that will be implemented to achieve measurable outcomes over the next five years. Measures of success will include removing impaired waters from the CNMI 303(d) list and satisfying existing BECQ and EPA performance measures.

Figure 2. CNMI Comprehensive Sustainable Development Plan, Goal 6

- By 2030, CUC's Master Plan for drinking water will ensure access to healthy, palatable, affordable, and sustainable drinking water for all communities of the CNMI
- By 2030, comprehensive land management results in water source and quality protection and improvement that supports freshwater quality goals to provide potable, palatable, and sustainable drinking water availability for all communities in the CNMI
- By 2030, the CNMI will improve water quality and reduce the risk of combined sewer overflows by implementing environmentally compliant point and nonpoint source pollution control programs for existing discharge systems and support the implementation of SSG to implement nature-based solutions and other cost-efficient interventions identified in the 2025 storm water management plan
- By 2030, implementation of CUC's Master Plan for wastewater, with support from planning partners, will result in at least a 30% reduction in unsewered households

Goal #	10+ Year Goals	3-5 Year "SMART" Objectives	FY20-21 Action Items	Action Lead(s)	Partnerships	Supporting Action Plan(s)	Funding Status / Unmet Need(s)
CLEAN WATER AND SANITATION							
6 CLEAN WATER AND SANITATION SGD 6 Ensure availability and sustainable management of safe and environmentally compliant water and sanitation for all	By 2030, the CNMI will improve water quality and reduce risk of combined sewer overflows by implementing environmentally compliant point and nonpoint source pollution control programs for existing discharge systems and support implementation of SSG to implement nature-based solutions and other cost-efficient interventions identified in the 2025 storm water management plan	Led by DPW and supported by the Built Environment Taskforce, (i) by 2023 DPW will implement updated guidelines for the MS4 storm water permit to ensure environmentally compliant and sustainable management of nonpoint source pollution conveyed by storm water infrastructure; and (ii) by 2025 DPW will draft a storm water management plan with interagency support to further enable these efforts;	Support development of stormwater management and MS4 compliance plan	DPW	BE Taskforce, BECQ	Stormwater management plan (anticipated by 2025); 2006 Stormwater Manual	Substantial infrastructure funding is being sought through numerous funding streams
	By 2030, implementation of CUC's Master Plan for wastewater, with support from planning partners, will result in at least a 30% reduction in unsewered households	By 2024 CUC and planning partner support wastewater treatment sustainability assessment to inform future plan updates; and By 2025, CUC will update and implement priority action items for their service areas plan for unsewered areas	BE Taskforce members continue to attend ongoing Watershed Working Group meetings and support incorporation of water source and quality protection into cross-cutting planning and project development efforts to protect and restore water related ecosystems	CUC, DEQ, NMHC	Supported by BE, NR, and SE/DRR Taskforces	CDBG / NMHC Strategic Plan; CUC Wastewater Management Plan	Substantial water and wastewater infrastructure funding is being sought through numerous funding streams

(Go to Appendix 1 of the CSDP's Implementation Plan for further objectives, and action items towards these goals).

COLLABORATION

The WQS/NPS Branch is primarily responsible for implementing the Division of Environmental Quality (DEQ)'s NPS Program. DEQ WQ/NPS staff collaborate with other BECQ branches; primarily the DEQ Wastewater, Earth Moving and Erosion Control (WEEC), DEQ Laboratory, Site Assessment and Remediation (SAR) Branches, and the Division of Coastal Resources Management (DCRM).

CWA 319 funds support some WEEC Branch work. In the next five years, with guidance from an environmental engineer, WEEC hopes to develop and implement earthmoving related training and certification workshops such as a Erosion and Sediment Control Specialist certification, to ensure all earthmoving activities are performed under the supervision of individuals who are trained and certified with the knowledge and understanding of erosion control standards. WEEC Branch will introduce the certification program to its staff as well as general contractors and/or project managers.

The NPS program's goal is to leverage funding to implement restoration projects contained in the community-vetted IWMPs and TMDL recommendations.

Outside of BECQ, WQS/NPS staff work with other CNMI Government and Federal agencies to remediate or restore watersheds as much as possible to their natural state. The WQS/NPS branch coordinates efforts facilitated by DCRM through participation in the Watershed Working Group, a multiple-agency forum that is a partnership between local and federal government agencies, environmental non-profits and other concerned groups which gathers to provide technical expertise and project support on watershed initiatives in the CNMI. The group generally meets every two months to discuss ongoing projects and request review or recommendations on specific issues. The WQS/NPS also actively engages in long-term sustainability planning and project coordination with OPD's Planning and Development Advisory Council (PDAC) and participation in related task forces.

Additionally, BECQ alerts CUC when infrastructure failures are identified through sanitary surveys, water quality monitoring, or stream or wetland assessments. CUC and the Department of Public Works (DPW) are also provided with the biennial CNMI IR and TMDL requirements and guidelines so they may make informed decisions about the use of funding to best address priority watershed issues. DPW uses Federal Highway funding to decrease sedimentation and runoff by improving roadway infrastructure with stormwater and other effective BMPs.

BECQ participates in the Local Work Group (LWG) led by the Saipan Natural Resources Conservation Service/Soil and Water Conservation District (SWCD) and the Northern Islands to encourage subsistence local farmers to adopt sanitary agricultural practices and avail upon funding from NRCS's Environmental Quality Incentive Program (EQIP) to deter further contamination of watershed surface waters by NPS sources. The purpose of the Local Work Group (LWG) meeting is to ensure that conservation programs address essential local resource needs. The workgroup allows for each agency to identify priority resource concerns. Survey elements include croplands, pastures, farmlands, piggery operations and associated agricultural land. The NRCS will finalize the survey to guide recommendations for future planning and funding conservation priorities. The group is scheduled to meet annually.

WQS/NPS staff frequently collaborate with the Micronesia Islands Nature Alliance (MINA), a local NGO that has in the past, and continues to provide additional funding for outreach and education efforts, especially during Environmental Awareness Month. MINA's Rangers also volunteer for stream and beach clean-up events.

Some examples of collaboration with other BECQ branches and agencies include tree planting activities with WEEC Branch; creating and building Rain Gardens with DCRM, and working with SAR to plan removal of UXO's found along streams and other areas surveyed by NPS Staff.

OVERVIEW OF THE NPS MANAGEMENT PROGRAM

The WQS/NPS Branch was established in 2013 in response to EPA's growing water quality program requirements as specified in the Clean Water Act (CWA) Sections 106, 303, 305, and 319. The main drivers influencing the development of goals, objectives, and strategies for this 5-year Plan include EPA's Clean Water Act (CWA) Section 319 NPS Program Guidelines and Vision for the 303(d) Program.[1]

[1] Note: As the 319 NPS Program Guidelines are currently under revision (as this is written in October, 2023), this 5-year may be adapted moving forward to address any major guideline revisions/updates.

WQS/NPS is responsible for developing and implementing the Beach Environmental Assessment and Coastal Health (BEACH) water quality monitoring program. The Program's goal is to evaluate attainment of the CWA's Designated Uses (DU) based on compliance with CNMI Water Quality Standards (WQS).

The public is notified whenever BEACH monitoring sites fail to meet bacteriological WQS through publication, social media, and posted BEACH Advisory signage. The notifications alert the public of potential health risks associated with recreating in these waters, in efforts to protect human health.

The Program also reviews CNMI WQS triennially to ensure that WQS criteria meets the latest scientifically derived criteria recommended by US EPA to ensure that water bodies remain "fishable and swimmable", in compliance with the CWA.

The WQS/NPS program submits water quality monitoring and notification data quarterly to EPA through the WQX portal. This information is then included in the biennial CNMI IR that contains the 303(d) list of impaired waters. This list steers policy decisions, prioritizes water bodies, and determines: 1) Where TMDLs are required; and 2) Which watersheds are in most need of remediation and restoration efforts or protection. IWMPs are developed to support these efforts.

In January 2020, contractors were hired to update the Garapan, Laolao, and Achugao IWMPs during a week-long workshop with key government agencies and NGO participants. Participants reviewed components of watershed management to meet EPA standards, including identifying watershed benefits, causes of impairments, and strategies to reduce these impairments and pollutant loads. The group revised the existing Plan's goals, objectives, and actions as "strategies." To date, only the Garapan and Talakhaya IWMPs have been revised, and the draft Achugao Plan has been published for finalization, anticipated in 2023. These IWMPs and their links are contained in the Bibliography of this 5-yr Plan, and future plans and plan updates will be incorporated by reference and in future revisions to this document.

During this 5-yr period, BECQ will concentrate efforts on implementing projects within the revised and soon to be revised IWMPs, and on other priority projects on Tinian, Rota, and the other remote Northern Islands of the archipelago as they are identified, and as funding is made available.

Critical programmatic priorities for addressing NPS water quality impairments are for BECQ to:

1. Continue collaborating with local, and federal agencies, and watershed activists to implement community-vetted restoration activities in the IWMPs; and
2. Follow the recommendations of the 2018 Bacteriological TMDL for Saipan (https://www.deq.gov.mp/assets/wqs/saipan_final_tmdl_report.pdf).

Each IWMP contains details of the watershed's characteristics, e.g., size, ownership, resources, and stressors. Each IWMP provides 5-Year objectives and actions to achieve load reductions for watershed improvement and include an estimation of funding requirements, partners, and other technical assistance to achieve these outcomes. Details may be found by clicking on the links provided below and navigating to the "5-Year Objective Section" of each Plan. IWMPs are written so that they are consistent in addressing the nine elements of a watershed based plan required in the 319 NPS Program Guidelines.

- 2022 Beach Road Pathway Master Plan (sub-watersheds of South-West Takpochao and North Susupe)
- 2020 Garapan IWMP (a sub-watershed of the West Takpochao watershed)

- 2022 Achugao Watershed Management Plan (AWMP) (sub-watersheds of Tanapag and San Roque)
    - Sub-watershed maps of Tanapag (South Achugao) and San Roque (North Achugao)
- Interim Laolao IWMP Report (3 major sub-watersheds of Laolao, Kagman and Dandan)
- 2020 Talakhaya IWMP (a watershed of the Rota Island)

These plans further reflect and align with the vision, goals, objectives, and guidelines of the 2021-2030 CSDP. In recent planning discussions, the leadership of Tinian's municipality have expressed interest in completing comprehensive watershed management studies for their island and potentially IWMP development for their watersheds. A IWMP focused on protecting Tinian's aquifer and drinking water systems is a top priority particularly in light of potential environmental impacts from the proposed Tinian Divert Air Base, and will move forward as capacity and funding opportunities are made available.

PRIMARY NPS ISSUES

Like most island nations, the most common sources of water quality degradation in the CNMI are from nonpoint sources of pollution. The CNMI's primary NPS issues of concern are: 1) stormwater runoff from existing roads and developments causing sediment and other pollutant loadings; 2) sewage discharge from failing wastewater infrastructure; 3) fecal contamination from free roaming feral and domesticated animals, and animal containments; and 4) heavy metal contamination from legacy WWII debris and dumpsites. Erosion of, and sedimentation from, improperly designed secondary coral roads, off-road vehicle recreational activities, and temporary hiking trails that cut through vegetation or streambeds are also of particular concern as these can contribute to sediment loading, turbidity and other NPS pollution within the watersheds.

Aside from these primary issues, BECQ stresses to the public, business community, and political leadership that more focus and funding are needed to support project implementation. This includes expanding and/or upgrading existing sewer infrastructure, preventing degradation of current infrastructure, and dedicating easements and public land for additional stormwater and other NPS BMPs.

Erosion and Sedimentation

During the rainy season, fill material from coral roads and eroded material from disturbed areas within the watershed washes into the ocean. During the dry season, more fill material is added to repair roads, which then erodes the following rainy season creating a cycle of repair and impairment. This activity has hindered water quality improvement for decades and requires continued attention, which BECQ provides through road crew training and infrastructure improvement planning. Aside from identifying funding for continued infrastructure maintenance and significant improvements, getting land dedicated to construct roadway BMPs has been a primary obstacle to improved water quality. Environmentally sound

construction of even one roadway (like the ARRA-funded Laolao Bay road improvements) is extremely costly but well worth the investment.

The Wastewater Earthmoving and Erosion Control (WEEC) Branch monitors and enforces the Earthmoving and Erosion Control Regulations for all development project sites in the CNMI that also ensure conditions for these project sites meet Water Quality Standards when applicable. Earthmoving Permits, also known as One-Start Permits, are issued to applicants for their proposed projects and WEEC inspectors ensure that proper erosion control measures and best management practices are implemented until the completion of such activities. Unpermitted earthmoving developments are flagged during routine inspections or are usually called in to BECQ as a complaint or concern from the community. Cease and desist orders will be enforced on the project and immediate installation of sediment controls are to be implemented.

Illicit Wastewater Discharge

BECQ has made significant strides in addressing the second source of water quality degradation, bacteria and nutrient loading from 'failing wastewater infrastructure,' through the regulation of new developments by implementing BECQ Wastewater and Erosion Control (WEEC) Regulations. However, the problem of how to address older homestead sites remains a challenge. WEEC staff conduct household surveys on a village-by-village basis to identify Individual Wastewater Disposal Systems (IWDS) that require upgrades to properly collect and treat wastewater before it washes into the watershed. In addition, CUC has regulations that require households to hook up to existing sewer lines (where they are available) instead of building septic leaching fields.

These IWDS and municipal sewer line repairs and improvements remain a high priority for the CNMI. A Nitrogen isotope (N) tracking study conducted by American University in FY 2017-2018 found that the majority of Saipan's shoreline surface waters had Nitrogen values greater than 3‰ (Kiho, K. 2019. "*Identifying Hotspots of Nitrogen Pollution in Saipan."* Final Report for NOAA CRCP, DCRM). These findings suggest that there is sewage-derived Nitrogen that may pollute nearshore waters. The study also found that groundwater inputs to the lagoon were highest during the rainy season and that "When surface and groundwater were analyzed for nutrients, groundwater nitrate concentrations were nearly an order of magnitude higher than those in surface waters, indicating that groundwater flow is an important pathway for nitrogen pollution" (Kiho, 2019).

In addition, BECQ continues to alert CUC engineers where there are "spikes" in coastal water Enterococci levels and uses the 303(d) list of impaired waters to guide government agencies responsible for resource management and policymakers to make informed decisions as to where fiduciary expenditures on wastewater infrastructure would be most beneficial for preventing NPS of pollution.

The BECQ Administrator and NPS Specialist will schedule regular meetings with the House Natural Resources Committee and Watershed Action Groups to discuss NPS issues and how best to address these issues. As a member of the OPD's PDAC, the BECQ Administrator also provides these updates to support comprehensive planning and project development efforts furthered by that group.

Free Range Animals and Livestock Wastewater Discharge

The third source of water quality degradation is fecal contamination from free-roaming domesticated and feral animals and livestock; and wastewater discharge from livestock enclosures. The CNMI WQS gives the WQS/NPS branch authority to impose a "Notice of Violation" (NOV) to any farmer or other individual who discharges animal or human wastewater to any waterbody and provides for mandatory setbacks. Individuals wishing to continue farm operations must comply with the CNMI WQS to prevent fines or penalties. Should subsistence violators be unable to pay for the required remediations, they are directed to meet with local NRCS agents to obtain support for sanitary animal pen designs through their EQIP program.

In addition to availing on NRCS technical expertise, WQS/NPS staff can act as a liaison between farmers and DPL to help obtain agricultural land exchanges for suitable public purposes. These exchanges have previously resulted in the relocation of farms to more appropriate areas within the watershed to prevent further contamination of waterbodies downstream.

WQS/NPS, WEEC, DCRM, and NRCS implementation of IWMPs and TMDL recommendations is the primary way domesticated animal waste pollution is controlled. However, more action is needed to address fecal contamination from feral pigs, cows, goats, stray dogs, and cats that can be found in large numbers at frequented beach sites, wetland areas, and stream beds around the islands. The impacts of dog waste was recorded in Sinigalliano's 2019 qPCR Microbial Source Tracking (MST) report that states, "Dog fecal indicator bacteria marker appeared to be relatively widespread about the island. "This includes the western central region of the Saipan Lagoon shoreline."

The CNMI is addressing the stray animal population through the Mayor's Office of animal control in efforts to limit waste entering the nearshore environment. There are several Non-profit groups working with the Mayor's offices on Saipan and Tinian to bring in veterinarians from the continental US and other nations to conduct low cost spay neuter clinics.

CNMI DEQ is in full support of these efforts in continuing to ensure a clean and healthy community in lessening significant contributions as such to land-based sources of pollution and impaired water quality affecting the health of CNMI's coral reefs and marine ecosystems.

Toxins and Heavy Metal Contamination

Dr. Denton et al. of the UOG WERI found in preliminary heavy metal contamination studies that Kalabera, Talofofo, East and West Isley, South Susupe, Central and North West Takpochau, South and North Achugao, and Banaderu watersheds' nearshore sediments were contaminated. The heavy metal contamination in sediment and biota was associated with WWII wreckage, dumpsites, and unexploded ordnance (UXO) (*Impact of WWII dumpsites on Saipan (CNMI): heavy metal status of soils and sediments*, Environ Sci Pollut Res, DOI 10.1007/s11356-016-6603-7.). This included Agingan Point wastewater outfall, Central and North West Takpochau, South Achugao watersheds, and Banzai Cliff.

A previous study in 2011 found elevated levels of mercury (Hg) in biota in the West Takpochau watershed, which was sourced to the now-replaced hospital incinerator (**2011.** *Impact of a Medical*

Waste Incinerator on Mercury Levels in Lagoon Fish from a Small Tropical Island in the Western Pacific. Denton, et al.). Mercury was also found in coastal sediment surrounding the island of Mañagaha.

Given the military waste and dumpsites left on Tinian, Rota, Pagan, and Anatahan islands after WWII and continued bombing exercises on No'os (Farallon de Medinilla-FDM). An in-depth stream sediment study was conducted in FY2022 in the six priority watersheds of South Achugao, North and Central West Takpochau, Talofofo, Kagman, and Laolao to gain further insight into the level of toxicity that may be found there. Sediments were tested for PCBs, Organochlorine Pesticides, Petroleum residuals, and heavy metals. The study reported that "Nearly all metals were detected across all watersheds and sampling sites, though none exceeded TPESLs. The MRLs for metals were an order of magnitude or more below the analytical results and well below the TPESLs, which validates the comparison of results against the TPESL standards. Some metals were near or slightly exceeded the US EPA Eco-SSL for "most sensitive" and "mammalian" receptors metals." (Nimbus Environmental Services, Hawaii, (2022), "*Stream Sediments Study in Accordance with Surface Water Quality Monitoring Plan for Six (6) Impaired Watersheds",* Prepared for BECQ, CNMI.).

These results, combined with earlier preliminary studies by Denton et al., strongly support a focused local biota study and assessment of human health risks associated with consuming local seafood in the CNMI using a Tier II heavy metal study. Further study findings would either support these watersheds remaining on the 303(d) list as impaired for the Consumption of Fish and Shellfish Designated Use or their removal.

TMDL

The CWA requires each state and territory to submit a 303(d) list of impaired waterbodies requiring TMDL development, the pollutants causing the impairment, and the sources of pollutants causing impairments. The next 303(d) list will be compiled in fiscal years 2024 and 2026 as part of the biennial IR.

In the CNMI, like other island territories, NPS is the predominant cause for impairment. FIB and nutrient exceedances of the CNMI WQS are the most frequently listed cause of impairment for CNMI waters. It should be noted that Enterococci impairment of Saipan's coastal waters is being addressed by implementing the 2018 Bacteriological TMDL.

BECQ will publish a request for proposals in fiscal year 2023 for a Tier II Heavy Metal study of accumulation in fish tissue and biota in Saipan's priority watersheds to be completed by 2027. Denton, et.al, of the University of Guam's Water Environmental Research Institute (WERI), conducted several studies that found heavy metals from nearby WWII debris dump sites are transported into sediment and biota in streambeds and the Saipan shoreline. This is of significance given DoD's interest in expanding and increasing the frequency of military training exercises in the CNMI. Tier II heavy metal studies on Saipan, Tinian, and the Northern Islands, which are the most polluted due to past military campaigns, will provide valuable information on possible human health risks associated with consumption of fish and shellfish. This information will inform resource managers if heavy metal TMDL development is needed in the future.

The first study will begin in Saipan, followed by Tinian and Rota starting in fiscal year 2024. Studies for Anatahan and Pagan will be slated for the next 5-yr NPS Management Plan.

MONITORING

The WQS/NPS program's primary responsibilities are to implement and enforce the CNMI Water Quality Standards by monitoring the quality of marine and surface waters (streams, wetlands, and lakes), to ensure that CNMI WQS are not violated, and waters remain fishable and swimmable. More information on how BECQ will measure its success in implementing this Plan and IWMPs can be found at this webpage: https://dcrm.gov.mp/our-programs/water-quality-and-watershed-management.

Marine Water Sampling

The WQS/NPS staff collect weekly marine water samples from identified BEACH monitoring sites. Samplers test physical parameters in situ including temperature, pH, dissolved oxygen, salinity, and turbidity. Water samples are delivered to DEQ's Environmental Laboratory to test for the Fecal Indicator Bacteria (FIB) Enterococci. The laboratory also tests for Total Suspended Solids, Orthophosphate, Nitrate + Nitrite as N, and Nitrate as N, monthly. The laboratory will be expanding its nutrient testing capability during this 5-yr period to include Ammonia and Total Phosphorus. These parameters will also be tested monthly.

In fiscal years 2023 through 2027, WQS/NPS will monitor 38 BEACH sites on Saipan's west coast weekly. The six (6) less frequented beaches on the northeast and southeast coasts of Saipan are monitored less frequently along with the 11 beaches surrounding Mañagaha, 11 surrounding Tinian, and 12 surrounding Rota. These latter BEACH sites are monitored on an eight (8) week rotational sampling schedule.

The 8-week rotating monitoring schedule couples Saipan's east coast beaches and Rota's beaches together, and Mañagaha and Tinian beaches together. When one pair of islands are being monitored weekly, the other pair will only be monitored once a month for the entire 8-week cycle. After the 8-week cycle ends, the paired islands are swapped. This ensures that water quality data are collected from all recreational beaches on at least a quarterly basis to capture seasonal changes. In so doing all beach sites are sampled meeting staffing requirements, boat availability for transport, and other budgetary constraints.

There is a growing need to expand water quality and biological assessments to the Northern Islands, especially on Pagan where future development is proposed. Baseline surface and ground water quality is lacking for Pagan, as well as for the other northern islands. Specifically, there are no public water systems in the Northern Islands. Twenty five people need to be using a system to qualify as a public water system. Pagan has a drinking water well, but it is in poor condition, no treatment is provided and it should only be used for emergencies. The well is a drop-bucket well and no one ensures groundwater protection at a surface level. According to the Commonwealth Election Commission, there are 162 voters in the Northern Islands but most of them are currently living on Saipan. However, Pagan is a very special place for many of the Northern Island residents who plan to reclaim their ancestral lands.

In addition, WQS/NPS also test water quality of probabilistic sites identified by EPA for annual National Coastal Condition Assessments. Eight sites in Laolao Bay are tested on a monthly basis and 50 reef flat sites around the islands of Saipan (16), Tinian (16) and Rota (18) on a quarterly basis. This testing is done in coordination with DCRM's Marine Monitoring Team (MMT) who conduct biological assessments of the benthic habitat at these locations.

The MMT has an additional 50 probabilistic Saipan Lagoon sites, and 30 seagrass sites, that WQS/NPS assist with on a quarterly basis. This information is used in combination with water quality data to provide an accurate portrayal of the chemical, physical, bacteriological, and biological conditions to forecast potential stressors or risks to CNMI's marine waters and determine if the "Support and Propagation of Aquatic Life'' DUs, is being attained.

Surface Water

WQS/NPS staff sample and test Susupe Lake's water quality bi-weekly. This includes all the parameters tested for marine waters with the difference being instead of salinity, conductivity is tested, and the FIB, *E. coli* is also tested along with enterococci. Monitoring results are used to determine if Lake Susupe attains all DUs. Surface waters of the CNMI are not used as a potable water supply. Therefore, this DU is not assessed in the biennial IR.

WQS/NPS began conducting biological assessments of Saipan's stream habitats in earnest in fiscal year 2020, and collaborated with the DCRM Watershed Coordinator to conduct Wetland Rapid Assessments and delineations in fiscal year 2021.

Streams within the CNMI are small, predominantly intermittent, and occur only in limited areas of the islands where geology and rainfall favors their formation. There is generally insufficient stream flow for water quality samples to be collected regularly or tested in enough numbers to make statistically powerful assessments of a stream system's attainment of their DUs. Therefore, the WQS/NPS uses a Stream Visual Assessment Protocol that contains quantitative and qualitative stream assessment elements including physical parameters such as the YSI Multiprobe Measurements-Turbidity, Salinity/Conductivity, Temperature, PH, Dissolved Oxygen, Aquatic Plant Growth, Channel Condition, Channel Flow Alteration, Bank Stability, Substrate Embeddedness, Canopy Cover/Shade, Riparian Width/Condition, Flora/Fauna and Habitat Availability, for assessing biological conditions to evaluate stream health. Should there be available funding and resources over the next five years, Stream Assessments will be expanded to Rota and Pagan. There are no streams on Tinian.

Since the WQS/NPS program began in 2012, there has been a marked improvement in identifying land-based sources of NPS. As soon as water quality results indicate there has been a pollution event, The WQS/NPS and WEEC programs work in collaboration with DCRM and other watershed stakeholders to narrow down the potential NPSs within the watershed. These findings are also communicated directly to CUC engineers and field staff so they can look for failures in utility infrastructure.

NPS pollution sources identified through biological assessments of streams and wetlands are addressed by implementation of restoration actions contained within the community vetted IWMPs and TMDL recommendations.

ASSESSMENT

Water quality test results are used in conjunction with other studies' findings to identify impaired waterbodies, and the causes and sources of impairment. Other studies include qPCR MST, heavy metal toxicity in sediment and biota, and other biological data gathered from stream, wetland, and coral reef, lagoon, and seagrass biological assessments.

The concentration of water quality pollutants is affected by rainfall, storm events, tidal fluctuations, and other atmospheric, climatic, and oceanographic conditions. The dynamic nature of these systems makes all water quality data very difficult to use on its own for assessing adverse impacts on a waterbody. Therefore, WQS/NPS and MMT staff use biological monitoring criteria coupled with water quality data to assess waterbody "health". The data collected on benthic habitat at probabilistic sites on the islands' reef flats and slopes, seagrass beds, and lagoons augment water quality data for resource managers to gain a better understanding of the current status of a waterbody and how it is affected by natural and human disturbances. This information is analyzed and utilized in developing IWMPs for priority watersheds. The MMT will continue to work closely with the WQS/NPS programs to identify areas of concern and evaluate the efficacy of management actions.

REPORTING

The WQS/NPS program submits water quality monitoring and notification data quarterly to EPA through the WQX portal quarterly. This raw data and other pertinent studies, and information gathered from other agencies, NGOs, and citizen scientists are used to assess which waterbodies meet their DUs and are considered "fishable and swimmable", and which are considered impaired. **A waterbody is determined to be impaired based on the percent exceedances of the CNMI WQS, field surveys, biological monitoring assessment data, habitat suitability, DPW and CUC activities, and other available studies.** All this information is used to compile the biennial CNMI IR, which contains the 303(d) list of impaired waters. This report is the principal means by which CNMI BECQ, Congress, and the general public evaluate whether CNMI waters meet WQS, and therefore attain their DUs.

The 303(d) list steers policy decisions, prioritizes waterbodies, and determines: 1) Where TMDLs are required; and 2) Which watersheds are in most need of remediation and restoration efforts. Once identified IWMPs are written through a collaborative process utilizing the best available science as well as stakeholder input. The next IRs will be compiled in fiscal year 2024 and 2026.

In addition to the IR, the WQS/NPS branch reports improvements to water quality through NPS Success Stories that are shared with local agencies, policymakers, EPA, and Congress to show that Section 319 funding is money well spent. NPS Success Stories highlight the restoration of NPS-impaired waters so they meet water quality standards.

This development of the 5-Yr plan and creation of the NPS annual reports to EPA aims to make the best use of limited financial and available human resources to implement several priority prevention and restoration projects. This 5-Yr plan aims to provide a general overview of the WQS/NPS Program activities and its milestones. It will be reviewed at least once a year for any necessary updates based on changes in program priorities and direction. Reports will be developed annually for the purpose of tracking program progress and spending against the 5-year NPS plan. Some of the required reporting will be compiled and sent to EPA as part of the progress reporting on the annual consolidated work plan. Reports will summarize the program accomplishments for the fiscal year in comparison to the negotiated annual Consolidated Grant work plan.

WATER QUALITY STANDARDS

The CNMI conducts a review of the CNMI WQS every three years to ensure that all water quality criteria are kept up to date with newly developed EPA criteria, and to develop CNMI-specific criteria established through scientific research. In addition, the WQS/NPS branch serves as the technical authority for interpretation of WQS as they relate to other BECQ and CNMI regulatory programs. The last triennial review was completed in 2021. Revisions included:

- Increased clarity, including using consistent terminology and defined terms throughout;
- Increased consistency between federal programs and state regulations, including the Tier 2 anti-degradation policy, and the Section 401 Water Quality Certification process;
- Established a presumption that Tier 3 anti-degradation requirements apply where BECQ determines that insufficient data exists to reasonably determine existing water quality;
- Applied land disposal requirements to all areas regulated as groundwater management zones;
- Clarified certain water quality criteria for cases when ambient conditions exceed numeric criteria;
- Established water quality criteria for radioactivity in Commonwealth waters;
- Clarified stoppage periods for activities with potential to adversely affect coral reproduction;
- Revised procedural requirements for Water Quality Certifications;
- Expanded enforcement procedures; and
- Deleted outdated appendix information regarding history and other background information.

The next triennial review will be completed in fiscal year 2024. One proposed revision is to provide a detailed explanation of how the anti-degradation policy is to be interpreted and implemented.

PERMITS

CNMI water quality is protected from adverse developmental impacts by WQS/NPS administrating the 401 Water Quality Certification Program and working in partnership with EPA's administration of the National Pollutant Discharge Elimination System (NPDES) for CNMI. In addition, the CNMI launched an online permitting system in 2022.

401 Water Quality Certification Program

The objective of the Section 401 Certification Program is to ensure that all discharges into CNMI waters are reviewed to ensure Water quality Standards will not be violated resulting in impairment, and that proposed projects follow an appropriate Water Quality Monitoring work plan to protect CNMI waters during operations. WQS/NPS reviews proposed work plans and gives 401 Water Quality Certifications upon their approval, or if appropriate provides waivers to developments whose projects fall under a Federal Nationwide Permit, as required by Section 401 of the CWA.

A Section 401 Certification is also required for most activities requiring an Army Corps of Engineers Section 404 permit for discharge of fill, and for some activities regulated by the District Attorney under Section 10 of the Rivers and Harbors Act.

Entities that are certified will be monitored to ensure they comply with CNMI WQS and other Certification requirements. Any certified development responsible for contaminating waterbodies in violation of CNMI WQS will be subject to enforcement actions.

National Pollutant Discharge Elimination System Permit Program

NPDES permits are administered by EPA Region 9 for Saipan's Municipal Separate Storm Sewer System (MS4); the two municipal CUC WWTP on Saipan; the package Membrane Bioreactor treatment plant on Mañagaha Island; one individual industrial stormwater permit, and for EPA General NPDES Permits, such as that for discharges from construction sites larger than one acre.

CNMI Online Permitting System

DEQ supports the CSDP's goal of centralizing this online permitting system by 2030. This will allow for easy permit information sharing and data tracking. The centralized system will track demand for water and wastewater by major developments, and other data to support implementation of best practices for water conservation, protection, and resilience through Smart, Safe Growth for the islands' social, economic, and environmental benefit.

ASSESSMENT, PROTECTION, AND RESTORATION PROJECTS

The following were selected as priority projects to be implemented over the next five years. They were selected based on water quality assessment results reported in the 2022 CNMI IR. These projects are to prevent further watershed degradation or to restore watershed integrity. **(See Appendix II for maps demarcating proposed project locations.)**

1. Tier II Heavy Metal Biota Study in 303(d) list of Impaired Watersheds

Objective:

Determine if the *Fish and Shellfish Consumption Designated Use* is attained for waterbodies previously suspected of being contaminated with heavy metals. Identified impaired waterbodies will be added to the 303(d) list for future TMDL development.

Project Description:

A Tier II study of metals in fish and other harvested biota from Saipan's streams and coastal waters, where preliminary screening levels from sediment and biota studies previously conducted by Denton et al., and by Nimbus Environmental, indicated that these water bodies Kalabera, Talofofo, East and West Isley, South Susupe, Central and Northwest Takpochau, South and North Achugao, and Banaderu might be contaminated, and unsafe for individuals to harvest aquatic life therein for consumption. Several watersheds are currently on the CNMI's CWA 303(d) list as impaired for heavy metals.

This Tier II study will incorporate previous data collection and use the US EPA Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volumes 1-3 (1996, 2000), and US EPA Guidance for Conducting Fish Consumption Surveys (2016) to complete the study design and to evaluate data to

determine the level of human health risks associated with consumption of local fish and shellfish, from heavily harvested areas, concentrating on sites near Second World War (WWII) legacy debris and Formerly Used Defense Sites (FUDS). The results from this study will provide an authoritative scientific basis to determine whether and to what extent a numerical TMDL for metals is needed.

Short-term goals:

1. To utilize EPA funding allowance in FY23 0000BD4 (Surface Water Environmental Protection Management) to conduct the study as the first phase in TMDL development by the end of 2024; program-to-program assistance with the Site Assessment and Remediation (SAR) Branch to identify possible remedial and/or assessments needed to distinguish Formerly Used Defense Sites (FUDS);
2. Work in partnership with the US Army Corp of Engineers (USACE);
3. Draft Tier II Study work plan will be finalized and approved in 2024;
4. Complete survey of what is potentially harvested and where within priority watershed communities in 2025; identification of sites that meets FUDS Inventory listings with SAR Branch
5. Sample and test fish and other biotas for heavy metal contamination that are most likely affected by the presence of such Unexploded Ordnance at FUDS in 2026;
6. Draft Tier II study findings for BECQ and EPA Comment by the end of 2026; and
7. Tier II study will be finalized with incorporated comments by 2027.

Long-term goals:

8. Remove watersheds from the 303(d) list where contamination was not found at levels that would pose a public health risk based on CNMI consumption levels;
9. List watersheds in the 303(d) list where CNMI consumption of harvestable aquatic life would pose a public health risk and;
10. Provide the CNMI Department of Public Health with Tier II findings to develop guidance for the island community's safe consumption to avoid those risks.

Measures of Success

BECQ will determine if a Heavy Metal TMDL is needed to address heavy metal contamination of Saipan's waters, or if Saipan's previously 303(d) listed waters may be removed for heavy metal contamination for Fish and Shellfish. If not, BECQ will determine BMP next steps to address the contamination.

Cost Estimate:

$100,000.00 under professional services to hire contractor to conduct a supplemental Tier II Heavy Metal TMDL study of fish and other harvested biota in the CNMI

2. Paseo De Marianas Storm Drain Guard Pilot Project (Garapan IWMP) (Document linked - see objective 13, activity 13.1)

Objective:

To identify high priorities and conduct actions to achieve load reductions in receiving waters and increase public awareness of stormwater impacts on water quality. By 2025 the Garapan Revitalization Task Force and Watershed Working Group have an action plan based on the Horsley Witten Model (Appendix B) to manage semi-annual catch basin cleanings (50 acres) of drainage area to address stormwater impacts through new structural stormwater BMPs including a 10% average reduction in impervious cover and in turf by 2030.

Project Description:

The Storm Drain Guards installation is a pilot project to see how effectively they remove debris before stormwater flows into Saipan Lagoon. (see pg. 31 IWMP list of objectives/Activity Objective One).

Storm Drain Guards are inserts to help businesses and homeowners meet the terms of Stormwater Pollution Prevention Plans and Stormwater BMPs by protecting the storm drains and catchment basins. At least three storm drain guards are installed and required to be monitored frequently by the CNMI Department of Public Works (DPW) Roads and Grounds maintenance support staff in the Garapan tourist district.

Short-term goals:

1. Identify funding for Educational signage about stormwater impacts to receiving waters
2. Inspect storm drains monthly, if maintenance is needed
3. DPW Roads and Grounds maintains storm drain guards
4. Statistical analysis of TSS and Turbidity levels before 2016 through 2028
5. Install and maintain 20-25 storm drain guards at hotspots in Garapan
6. Present report to Watershed Working Group and on social media outlets
7. Present report to public during Environmental Awareness Month and Ocean's Month in June
8. Write up statistical analysis results into a report on Storm Drain Guard Pilot Project, potentially a success story through 2021-2028

Long-term goals:

By 2025, 20 Green Infrastructure or stormwater mitigation projects have been implemented through a pilot program that provides funding and technical assistance to homeowners or businesses

Lead and Track Progress: DCRM Watershed Coordinator, BECQ/DEQ Water Quality/NPS and DPW

Figure 3. Storm Drain Guard with Captured Sediment

The project means to actively engage with the community on the importance of reducing stormwater pollution by making sure that the Storm Drain Guards are functional and require regular maintenance.

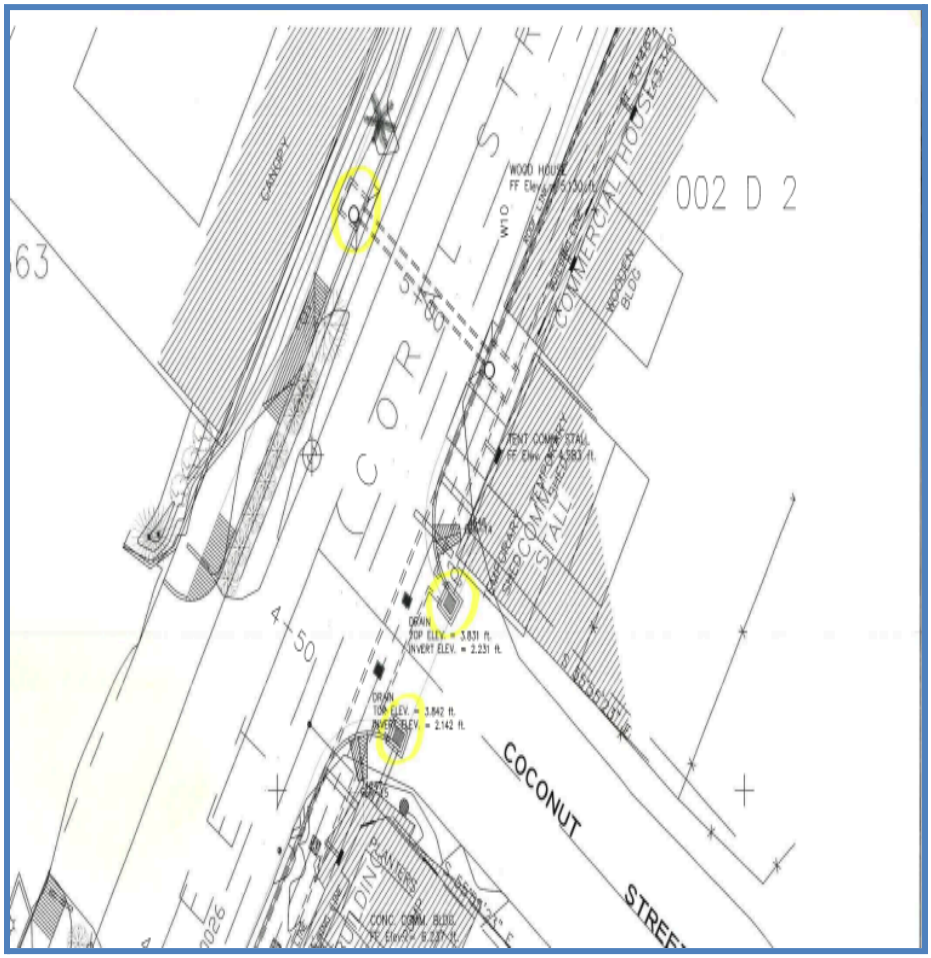
Figure 4. Storm Drain Guard Maintenance

DEQ is responsible for ensuring that DPW regularly maintains the Guards as part of the MS4 requirements. WQS/NPS Project Lead provided DPW staff with a Maintenance Checklist.

The purpose of the Maintenance Checklist is to upkeep responsible maintenance personnel with the summary guide outlining the procedures for frequent maintenance, monitoring, and record tracking of the Stormwater Management System located in the Garapan district area.

Storm drains are checked regularly on a seasonal basis to monitor the maximum effectiveness during wet and dry seasons to reflect the data. (See Maintenance Checklist in Figure 6. on the following page for more details.)

Figure 5. Storm Drain Guard Map location



The storm drain guards have been placed in areas that are most vulnerable to flooding alongside each other by Coral Avenue St. in the Garapan tourist district. The Storm Drain Guards were installed in September 2021 with the intention to serve as a test run for the inserts.

In addition to the map location and diagram, here is a short youtube video below the link that explains further details of the concept behind the storm drain guards and its proper use of handling the inserts in efforts to reduce further stormwater pollution.

https://www.youtube.com/watch?v=f24d2mzd3vo

Figure 6. Storm Drain Guard Checklist

STORM DRAIN GUARD MAINTENANCE CHECKLIST

FREQUENCY CHECK RECOMMENDED
√WEEKLY DURING RAINY SEASON AS NEEDED
√MONTHLY DURING DRY SEASON

☐	**Practice safety first at all times→** Use proper protective equipment *Gloves, boots, proper outdoor gear, traffic safety cones, etc.
☐	**Amount of sediment collected→** # in buckets of sediment # in volume→_____
☐	**#of Trash and Debris→** Trash and debris build-up in the storm drain.
☐	**Water Quality→** Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing through area during dry or wet weather.
☐	**Photos taken→** Other collection of any evidence of contaminants or other pollutants.
☐	**Mark weather conditions→** Dry or wet?
☐	**Note→** comments or suggestions? _____ _____ _____
☐	**Time & Date of removal:**

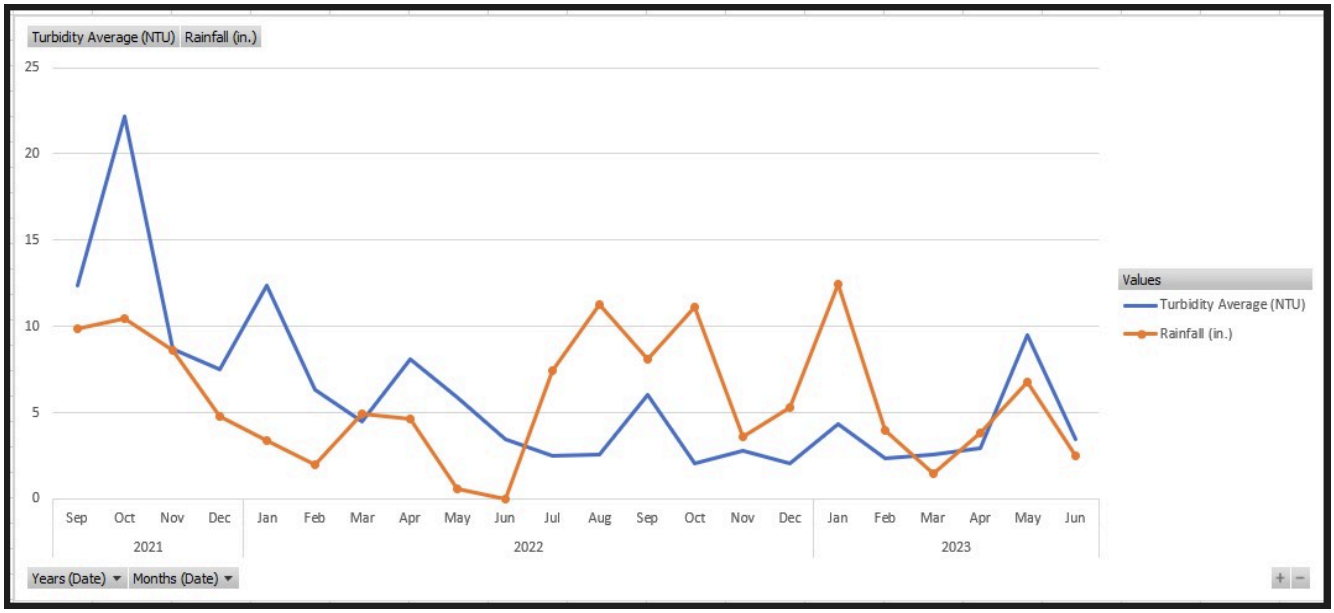
The DPW Roads and Grounds crew is tasked to maintain the Guards that provide safe and effective operation in collaborative efforts to improve stormwater management measures.

DEQ documents the effectiveness of storm drain guards, through ongoing use of the checklist and regular site observations.

Measures of Success

Success will be measured by:

- Number of storm drain guards installed and monitored
- Weigh cubic yards of sediment and other materials retained in the storm drain guards
- Reductions in turbidity at Fiesta drainage



Turbidity Trend at the Garapan Fiesta Drainage in Saipan- This chart reflects the average turbidity between dry and wet season year-round since storm drain guards were installed in 2021.

Will have determined decreased discharge of NPS pollutants such as turbidity and sedimentation from the MS4 to the maximum extent practicable (MEP), to protect water quality to satisfy water quality requirements that includes appropriate best management practices to conduct equivalent outreach activities about the impacts of storm water discharges on receiving waters and the steps that the public can take to reduce pollutants in stormwater runoff.

Cost Estimate:

To provide support for DPW partners, DEQ will supply storm drain guard inserts including installation at an estimated cost of $10,000.00. This is for 20-25 proposed hotspots in Garapan. A dozen storm drain guards costs $1,008.00 with 3-4 replacements per drainage, we would want to purchase 100 covers. Recently the three existing storm drain guards were replaced after two years of use (established project in September 2021).

3. Green Infrastructure to Reduce Nonpoint Source Pollution (Achugao IWMP) (Document linked - project included in summary of key projects table)

Objective:

To improve pollutant removal performance and aesthetics of the hotel's stormwater infrastructure with wetland vegetation in the central pond system and parking lot improvements.

Project Description:

Decades of water quality monitoring and assessment by the CNMI BECQ and the development of a Total Maximum Daily Load (TMDL) for Bacteria on Saipan have shown that land-based sources of pollution (LBSP) are a significant contributor to water quality impairment in the Achugao watershed. The Achugao watershed is one of Saipan's most developed and highly impaired watersheds and was designated as a Priority Watershed by the Division of Coastal Resources Management (DCRM) in 2019. DCRM began a process to develop an Integrated Watershed Management Plan (IWMP) to address LBSP in 2020. The National Oceanic and Atmospheric Administration (NOAA) contracted an assessment of the Achugao watershed and held a Watershed Management Workshop with stakeholders in January 2020.

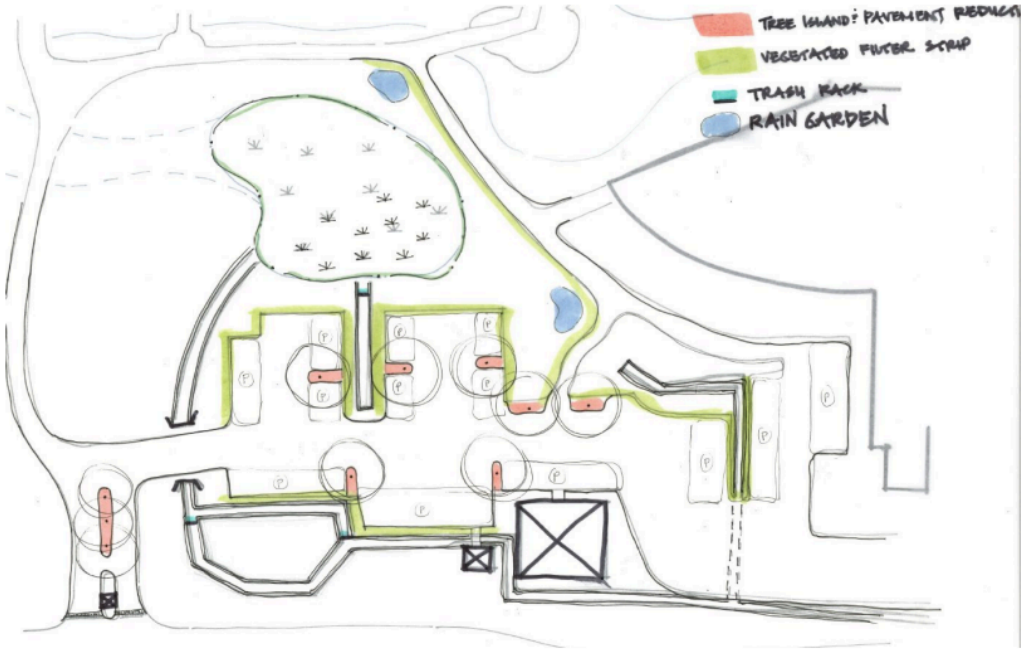
The assessment and discussion with stakeholders supported the idea for implementation of green infrastructure to reduce LBSP delivery to coastal waters. Stormwater runoff and other types of non-point source of pollution, coupled with overburdened and aging sewer and stormwater infrastructure systems, have been identified as ongoing issues in the CNMI which have contributed to diminished nearshore water quality, and steady decline of coral and seagrass habitat.

The San Roque sub watershed, where Kensington Hotel is located, was identified as the largest contributor of pollution (nutrients, sediment, and fecal coliform) in the Achugao watershed. Kensington Hotel was specifically identified as an appropriate location where stormwater retrofit activities could benefit coastal water quality.

The project will implement green infrastructure techniques on or adjacent to the parking lots, roadways, pathways on or adjacent the Kensington Hotel grounds with an emphasis on the southwestern end of the property. Specific green infrastructure techniques to be implemented include vegetated swales, treatment wetlands, buffer strips, and catchment basins. These strategies are appropriate for this area because many of the hotel facilities are immediately adjacent to an existing constructed open drainage canal that flows through the Kensington Hotel property and out into Saipan Lagoon. This existing canal captures stormwater runoff from the hotel parking lots, rooftops, roadways, and pathways and delivers it to Saipan Lagoon through an existing outfall. Additionally, the outfall for San Roque Creek, the largest creek in the San Roque Village area, is immediately to the south of the hotel and drains many of the areas on the southwestern end of the hotel property. There are opportunities for smaller green infrastructure practices to be placed between impervious surfaces and the canal and creek to capture pollutants before they ultimately reach these water bodies.

Short-term goals:

1. Identify potential funding for Green Infrastructure to Reduce Nonpoint Source Pollution in Achugao Priority Watershed Project
2. Plan 1st retrofit existing development with green infrastructure e.g; (schools, hotels, industrial area and roads)
3. Work closely with WEEC to aggressively enforce erosion control measures at construction sites to rectify problematic area
4. Collaborate with DEQ Engineer to update technical design for stormwater BMPs and wastewater erosion control manuals to help address Nonpoint Source Pollution
5. Apply standards to include 401 WQS certification requirement to proposed development, large renovations, and road improvements to address existing problems
6. Seek education and outreach opportunities for the community and hotel guests to promote sustainable and locally appropriate initiatives
7. Increase maintenance capacity for drainage system to develop an inspection and maintenance schedule with hotel staff and maintenance
8. Hire/Train more staff on maintenance of green infrastructure and MS4 program in collaboration with DPW



Initial sketch of parking lot improvements at Kensington.

During the January 2020 field assessment, the contractor conducted sketches and layout of proposed green infrastructure at the southwestern end of the Kensington Hotel property. These sketches and accompanying description will be used as a starting point for this project design to construct sustainable green infrastructure to reduce runoff to wetlands and manage urban stormwater runoff from village streets by expanding sustainable

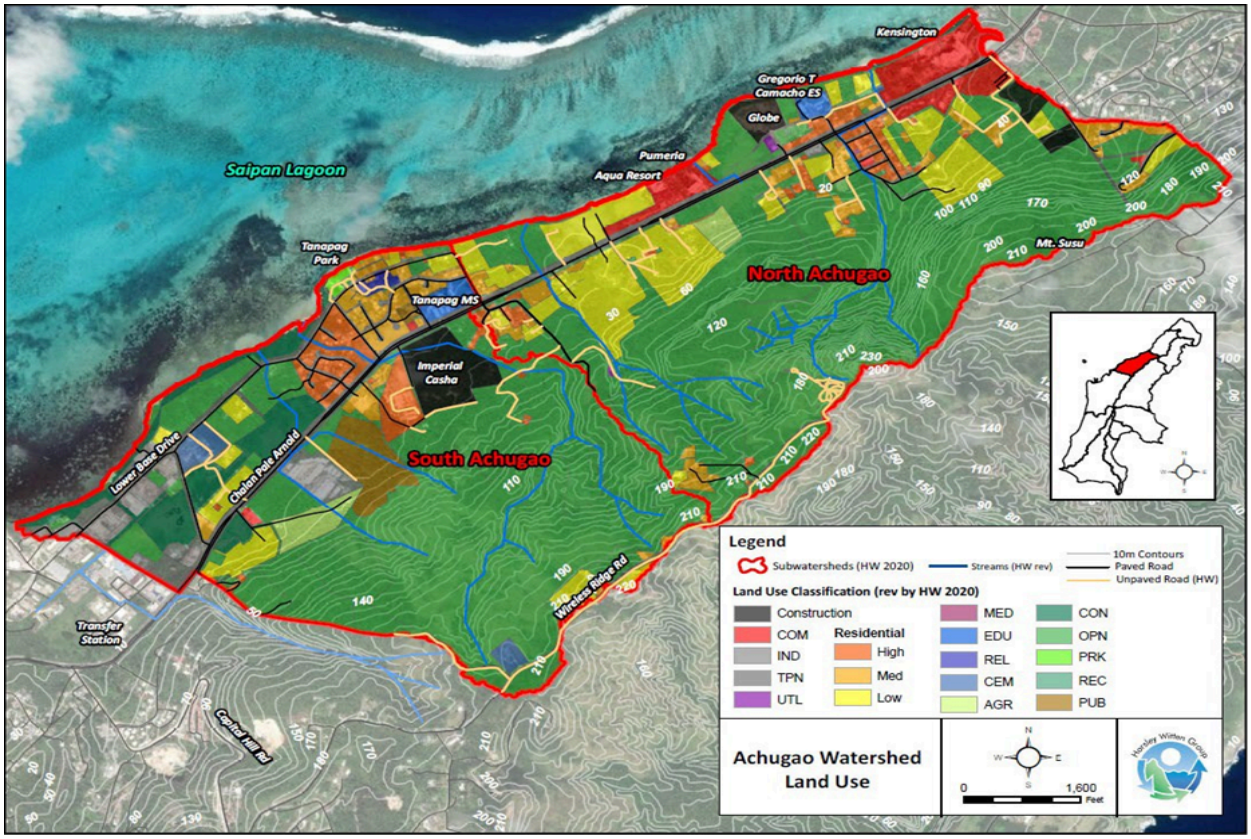
green infrastructure into an open-spaced hotel parking lot and retrofitting existing development with green stormwater infrastructure; two rain gardens, vegetated filter strips and 3 trash racks suggested on the sketch shown above.

Figure 7. Kensington Hotel Site

Long-term goals:

1. Reduce urban pollutant loads to the Northern part of the San Roque Lagoon by managing pollutant removal of 35-50% Total Suspended Solids of 12 acres and applying better land use controls on new development and maintaining green infrastructure.
2. Community gains understanding that installing BMPs and green infrastructure improves nutrient removal performance that allow for the restoration and creation of the wetland habitat.

Figure 8. Achugao Watershed Land Use Map by Horsely Witten field assessments in 2020



Measures of Success:

Success will be measured via reduction of 35-50% of Total Suspended Solids, and the increased application of green infrastructure BMPs on new developments in the watershed.

Cost Estimate:

Kensington Hotel Sustainable Green Infrastructure (AN-501 & 601) Improve pollutant removal performance and aesthetics of hotel's stormwater infrastructure with wetland vegetation in the central pond system and parking lot improvements. $150,000- $170,000

4. Constructed Wetland at Navy Hill/AMP (Garapan IWMP)

Objective:

To implement a portion of top priority stormwater BMPs identified in the Garapan IWMP action plan, components covering at least 134 acres by 2025 and aiming for 50 acres by 2030.

Project Description:

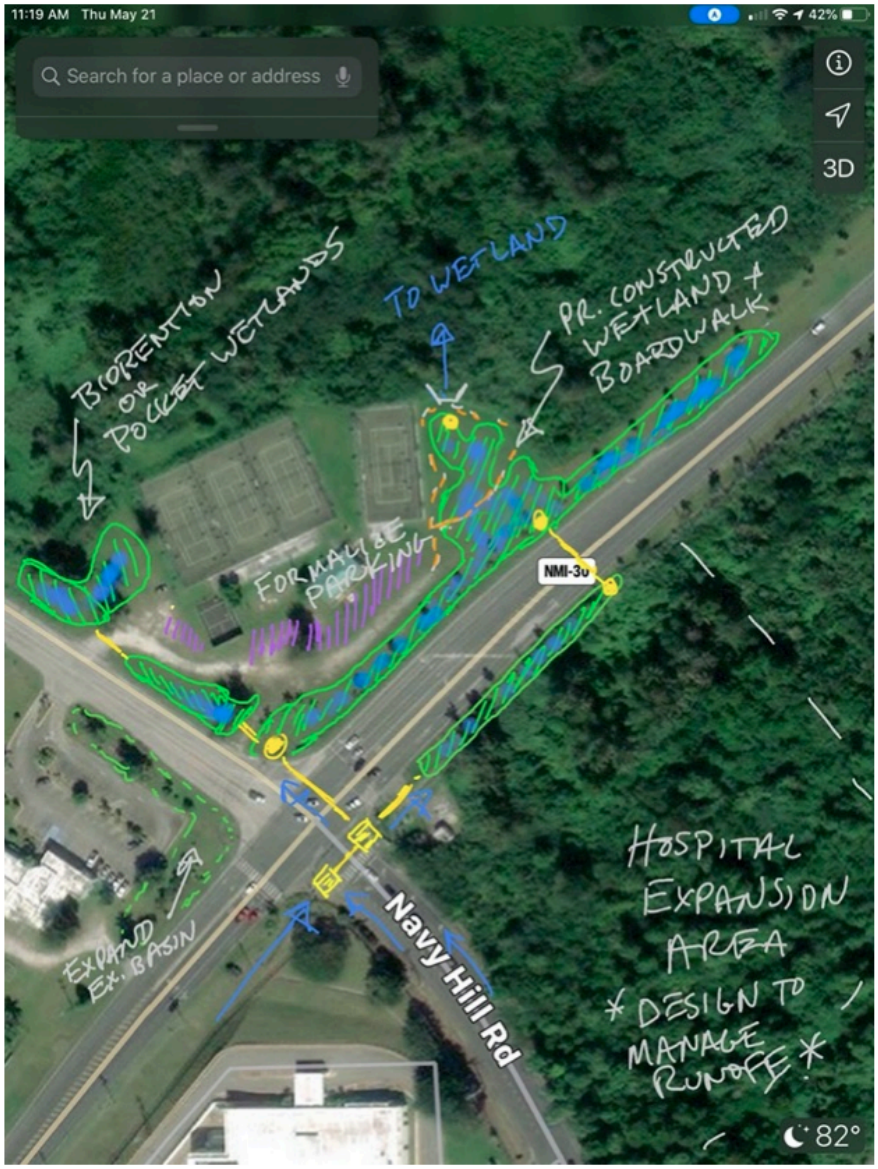
A rapid watershed assessment with coordinated efforts in Garapan was completed in 2020 by the Horsley and Witten group of engineers, KOA Consulting, The Nature Conservancy, Sea Change Consulting, BECQ and NOAA illustrated that this area is rated as "high priority" for specific BMP opportunities achievable in Navy Hill Road. Such opportunities include Stormwater Retrofit, Stream/Wetland Restoration and Watershed Education/Signage to increase awareness about wetlands function and importance.

As a result of existing conditions of the area, unmanaged runoff down Navy Hill Rd. is collected and discharged directly from across the wetland behind tennis courts of AMP. Currently, there is an open grassed area between the courts and along the road right-of-way that could be used for stormwater treatment. The open parcel on the corner across from the hospital is slated for hospital expansion use, but was recently made into a parking lot for emergency response during the COVID-19 pandemic. The exact location of the culvert under Middle Road or the pipe outfalls into the wetland are unknown. Providing treatment of runoff is important to maintaining the ecological functions of the wetland.

The challenges and constraints of this potential project includes land ownership and open space that may be used for parking or other events.

Sketch below is estimated over 134 acres, and assumed 20% of impervious cover.

Figure 9. Navy Hill Constructed



Short-term goals:

1. Identify load reduction model for specified restoration project and actions based on water quality data e.g. # of (SSO, septic systems, concentrations in effluent, livestock estimates)
2. Partner with Watershed Working Group and AMP to designate tennis courts area for wetland restoration quarterly by 2024-2028;
3. Constructed wetland plans will be done in house with the assistance from Watershed Coordinator and BECQ Engineers in 2025-2026;
4. Develop Wetland NPS outreach guide with AMP Rangers 2024-2025;
5. Post Scope of Work and Request for proposals in 2026-2027;

6. The contractor to install additional inlets, piping on road as need to convey flows into a constructed wetland complex designed for recreational use and aesthetic benefits in addition to habitat, water quality and flood control in 2026-2027;
7. Students gain hands-on experience planting and wetland functional benefits in 2026;
8. Schedule school visits to the wetland starting in Environmental Awareness Month 2026-2027;
9. NPS rangers use Wetland NPS outreach guide to provide tips on how to conserve and protect wetlands; 2027-2028

Long-term goals:

1. Decreased flooding in Garapan
2. Decrease sediments from Navy Hill runoff and
3. Improve water quality in receiving waters in order to attain water quality standards
4. Wetland maintenance to be conducted by AMP Rangers

Measures of Success

BECQ WQS/NPS anticipates that 5 years of water quality data will reflect water quality improvement and reduce total suspended sediment levels to the receiving waters as a result of the designed wetland restoration.

Cost Estimate:

$110,000-220,000 depending on the scope of final designs and construction costs.

5. Dogas Stream Restoration and Protection (Achugao IWMP)

Objective:

Empower community-based watershed stewardship by conducting at least 30 engagement, advocacy and watershed educational outreach activities.

Project Description:

Found in the Achugao Watershed, is at the outlet of an estuary stream known as the Dogas Stream. The Tanapag community frequently uses the park for general recreation with their family and friends and the park' public amenities support numerous social activities including use of the playground and the boat launch for fishing. Fish is a critical and reliable food source for the Tanapag community.

The Dogas Stream is among the island's most significant and consistent estuary ecosystems. This stream is found in the northern mangrove habitat where fish sightings have been recorded. This estuary is a productive ecosystem that serves as essential nesting habitats and is home to some native species.

Tanapag Community Activists have submitted numerous complaints of an abandoned boat and a house near the stream being used as an illegal dumpsite. These both pose a serious threat to the community's surroundings and the health of marine life in the Tanapag Lagoon. Organized beach clean-ups are common on Saipan, but most tend to be more on popular tourist beach destinations. This project will

focus on engaging community members in stewardship activities around Dogas Stream and the Tanapag Beach Park. BECQ and other agencies have previously partnered with some of these community groups to address NPS pollution. Activities have included street, beach, storm drain cleaning, sewer line connections, helping village farmers build sanitary piggeries, and keeping animals penned. Work has also included green infrastructure projects like school rain gardens, permeable pavement, and detention basins. Community group efforts are instrumental to improve watershed awareness in order to help protect this stream and estuary. In addition to improving aquatic community health locally, the CNMI Stream Visual Assessment Protocol was developed in 2020 by BECQ to characterize the stream conditions in Dogas. Data collected will be shared to keep the community well- informed.

FIGURE 10. Stream Visual Assessment Protocol Applicable Elements

1. Aquatic Invert/Fish present (Diverse=**4**, crustaceans or ≥2=**3**, ≥1=**2**, 0=**1**)					
2. Aquatic Plant Growth (clear-**4**, slime-**3**, macroalgae-**2**, pea green-**1**)					
3. Channel Condition (natural-**4**, altered/soft-**3**, hard walls-**2**, hard walls/bottom-**1**)					
4. Channel Flow Alteration (natural-**4**, Withdrawal/Discharge input-**3**, many W/D-**2**, W > flow-**1**)					
5. Bank Stability (Stable >75%-4, 50-75%-3, 25-50%-2, <25%-1)					
6. Canopy/Shade (>80%-4, 50-80%-3, 20-50%-2, <20%-1)					
7. Wood Cover/Habitat below Bankfull (>50%-4, 25-50%-3, 5-25%-2, <5%-1)					
8. Riparian Condition (Rip=Fldplain&diverse-**4**, Rip=2 channel&diverse-**3**, Rip=Bnkfull-**2**, Rip<1 channel-**1**)					
9. Contamination (None-**4**, Small amount-**3**, Prominent-**2**, Unsanitary-**1**)					
Circle all applicable sources:	-Trash/Litter -Rd./Surface Runoff -UXO -Marine Debris -Human Waste/TP -Farm Runoff -Illicit Discharge/Pipe -Other (see notes)	-Trash/Litter -Rd./Surface Runoff -UXO -Marine Debris -Human Waste/TP -Farm Runoff -Illicit Discharge/Pipe -Other (see notes)	-Trash/Litter -Rd./Surface Runoff -UXO -Marine Debris -Human Waste/TP -Farm Runoff -Illicit Discharge/Pipe -Other (see notes)	-Trash/Litter -Rd./Surface Runoff -UXO -Marine Debris -Human Waste/TP -Farm Runoff -Illicit Discharge/Pipe -Other (see notes)	-Trash/Litter -Rd./Surface Runoff -UXO -Marine Debris -Human Waste/TP -Farm Runoff -Illicit Discharge/Pipe -Other (see notes)

FIGURE 11. CNMI SVAP Scoring Key

1. Aquatic Invert/Fish present	
Condition	Score
Diverse - fish, crustaceans, insects, tadpoles	4
crustaceans, or two or more other species	3
one or more aquatic species (striders, etc.)	2
water present, but no aquatic species	1

2. Aquatic Plant Growth (indicator of eutrophication)	
Condition	Score
Water clear with no significant algal scum or microalgae	4
Submerged stones, twigs or other material are slimy but algae is not obvious	3
Large clumps or mats of macroalgae present; or distinctive green/brown scums visible on bottom or sides of stream	2
Water green or pea green; or channel choked with grasses	1

3. Channel Condition (indicator of artificial bank modifications)	
Condition	Score
Natural Channel	4
Channelized by humans but natural walls and bottom	3
Walls Hardened (eg. concrete, rip-rap)	2
Walls and Bottom Hardened	1

4. Channel Flow Alteration	
Condition	Score
No withdrawals, diversions, or stormwater/ag water discharge entering segment	4
Intermittent withdrawals or inputs not actively occuring during assessment (eg. Pipe or hose present)	3
Constant withdrawals/inputs occuring within segment, but less than streamflow	2
Withdrawals/inputs equal or exceed stream flow	1

5. Bank Stability (up to bankfull, both sides)	
Condition	Score
>75 % Stable (not bare or erodible)	4
50-75 % Stable (not bare or erodible)	3
25-50 % Stable (not bare or erodible)	2
<25 % Stable (not bare or erodible)	1

6. Canopy/Shade	
Condition	Score
>80 % cover	4
50-80 % cover	3
20-50 % cover	2
<20 % cover	1

7. Wood Cover Presence in Stream below Bankfull	
Condition	Score
>50 % cover	4
25-50 % cover	3
5-25 % cover	2
<5 % cover	1

8. Riparian Condition (indicator of buffer capacity)	
Condition	Score
Riparian area covers entire floodplain, undisturbed, diverse mostly native vegetation.	4
Riparian area more than two channel widths (bankfull) wide, diverse vegetation.	3
Riparian area same width as channel (bankfull), non- diverse or mostly non-native vegetation.	2
Severely degraded riparian area, less than one channel width (bankfull) wide. Little or no vegetation.	1

9. Contamination	
Condition	Score
No sources of contamination are present	4
A small amount of contamination is evident but not prominent	3
Contamination is prominent	2
Unsanitary waste or environmental toxins are present (eg. animal carcass or excrement, diapers, bleach bottles)	1

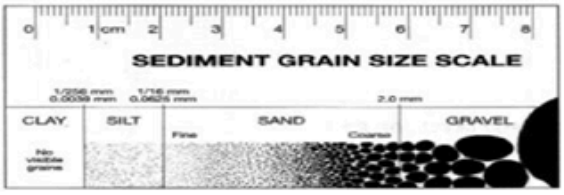


FIGURE 12. Dogas Stream

SVAP Ratings- Score of Each Element from Good-Bad (4-1)

Greater > than 3.5 = Very High

3.1 - 3.5 = High

2-3 = Fair

Less than <2 = Low

Direct link on scoring elements for more information:

https://dcrm.gov.mp/wp-content/uploads/crm/Stream-Visual-Assessment-Protocol_CNMI-2020-V2-Final.pdf#page=16

FIGURE 13. **Dogas Stream Restoration and Protection (Achugao IWMP)**

Short-term goals:

1. Increase the number of community stewardship activities in Tanapag and San Roque location schools through Watershed Warrior Program and active members in stream restoration projects (e.g., plantings, rain gardens, trash removal in streams, WQ monitoring) 2025-2028;
2. Collaborate with Watershed Coordinator to incorporate wildfire awareness and prevention in northernmost areas of Tanapag and San Roque in 2024-2028;
3. Increase public opportunity to use the streams in its natural state for recreational purposes 2024-2028;
4. Include the application of Erosion control and sedimentation on roads handout materials impacting streams to homeowners and businesses 2024-2028;
5. Partner with DLNR Forestry to plant native plants in designated revegetating areas 2025-2028;
6. Install Educational signage about NPS contributors that flow through streams and water quality impacts by 2027 and
7. Continue to work with DCRM Watershed Coordinator and other partnering agencies to align NPS goals through embedded Achugao watershed restoration goals.

Long-term goals:

1. Community restoration efforts reduce erosion and sedimentation on several roads from Tanapag runoff;
2. NPS Watershed guide created and provides education on beneficial ways to protect the local watershed; and

3. Educate community stakeholders on the economic value of watershed services.
4. Manage stormwater practices and increase community stewardship concerning watershed protection in the Achugao Watershed and Tanapag Lagoon, improving water quality.
5. Stewardship of watershed and human behavior change that lead to:
    1. Pollutant source control/prevention
    2. Erosion/Sedimentation reduction
    3. Prevention of wildfires

Measures of Success

Will have determined the amount of pollutants removed from and/or prevented from entering runoff in streams based on SVAP methodology; and achievement of WQS as a result of stewardship program implementation.

Cost Estimate:

Dogas Stream Restoration and Protection-Funding community-led resiliency through stream restoration monitoring activities allowing continuous recreational usage, and educational engagement opportunities for park users. 150,000.00 depending on the project activity

6. Identify High Priority Individual Wastewater Disposal Systems for Repairs and Connection to Sewer (Garapan IWMP)

Objective:

By the end of 2025, all high-priority individual waste disposal systems in Garapan have been identified, and 10% of inspected sites have been repaired.

Project Description:

Most people would consider Garapan on Saipan as the center of the economic hub of tourist attractions that includes hotels, marine water sports, schools, health clinics, bars, restaurants, and other commercial establishments within the area.

However, not all establishments are adequately connected to the public sewer system. Marine water sampling and monitoring show that the Garapan beaches are affected by contaminants and pollutants; many of these contaminants and pollutants are carried into the lagoon through stormwater runoff. One way to eliminate impurities from entering our lagoon is to identify non-compliant Individual Wastewater Disposal Systems, improper disposal systems, and improper public sewer connections.

This project aims to reduce the direct and indirect discharge in the CNMI waters and groundwater through education and outreach surveys as well as compliance and enforcement measures.

Figure 14. Individual Wastewater System Infrastructure Repairs and Connection to Sewer

Short-term goals:

1. Address immediate wastewater violations 2024-2028;
2. Conduct On-site Disposal survey in Garapan, Navy Hill, and Chinatown in 2024-2028;
3. Conduct educational outreach on IWDS and public sewer connections quarterly in 2024-2028;
4. Assess possible wastewater violations within Garapan, Navy Hill, and ChinaTown in 2024-2028;
5. Provide guidance and/or enforcement actions for wastewater compliance within Garapan, Navy Hill, and Chinatown 2024-2028;
6. Identify commercial businesses that are using IWDS within Garapan, Navy Hill, and Chinatown quarterly by 2024-2028; and
7. Coordinate with CUC to have commercial entities on IWDS connect to public sewer if possible or available 2024-2028.

Long-term goals:

1. Reduction of contaminants entering into storm drains and the lagoon.
2. Identify and resolve non-compliant sanitary sewer line connections to stormwater infrastructure.
3. Support and collaboration with the Department of Public Works and Commonwealth Utilities Corporation to maintain and improve Garapan Watershed.
4. By the end of 2025, all high-priority individual waste disposal systems in Garapan have been identified, and 10% of inspected sites have been repaired.

Figure 15. Number of Lots to be surveyed in the Garapan Watershed

Measures of Success

Garapan Watershed village area on all commercial, private, and public establishments will have updated data that will include number of repaired IWDSs that now treat wastewater properly, number of IWDSs/homes/businesses now properly connected to wastewater sewer system, and improvements in receiving waters in lagoon quality as a result of fixed IWDSs for proper wastewater treatment and the amount of IWDSs, homes and businesses are properly connected to the public sanitary sewer system. All noncompliant connections or overflows will be addressed with the responsible parties.

Cost Estimate:

Minimal cost; about $100-200 for maps and supplies to conduct the survey. Note *Staff paid under consolidated grant.

7. Address High Priority Projects on Rota, Tinian, and Northern Islands as Opportunities Present Themselves

High priority integrated watershed management planning is discussed at length in the Comprehensive Sustainable Development Plan (CSDP), which incorporates this 5-yr management plan by reference and regular PDAC review and approval. As detailed in the CSDP, there are ongoing island-wide and resource-specific water quality management planning efforts underway that the WQS/NPS Branch will continue to support by providing technical guidance, project support, and in other capacities as time and funding allow.

Objective:

Coordinated land use management planning and wise development to reduce risks to CNMI's land and water resources to support and sustain island-wide watershed-specific integrated management planning that is incorporated into comprehensive plan updates by 2030.

Short-term goals:

1. Share information and ensure inclusion of NPS leading practices in planning and project development by regularly participating in planning and project update discussions through All Planners, PDAC, Coral Work Group, NOAA's Coral Reef Conservation Program (CRCP) Local Working Group (LWG) and Watershed Working Group meetings;
2. Share BMPs, and project concepts at events including Environmental Expo, Youth ("Tasi-to-Table") Fishing Club, and Oceans Month annually, etc.;
3. Support the collection and integration of mapping stream visual data into permitting and other resource management systems in 2024 working with planning partners to identify water, wastewater, and stormwater utilities upgrades to achieve water quality, NPS and land use planning goals and objectives; and
4. By 2025, watershed assessment and capacity analysis will develop initial recommendations for a priority watershed program for the island of Tinian.
5. Conduct watershed mapping in the Northern Islands (Pagan) to identify NPS hotspots and critical drinking water sources

Long-term goals:

1. By 2030, CNMI will improve water quality and reduce risk of combined sewer overflows by implementing environmentally compliant point and NPS pollution control programs for existing discharge systems and support implementation of SSG to implement nature-based solutions and other cost-efficient interventions identified in the 2025 stormwater management plan; and

2. BECQ will reduce stormwater runoff by maintaining and increasing green infrastructure, and stormwater management processes leading to a 50% reduction in water impairment ratings for coastal waters of Tinian and Rota by 2030 (as described in the CSDP).

Measures of Success

By 2030, there will be interagency programs that support active management of prioritized resources and management areas on land and in nearshore waters reflected in the CSDP update, and at least 30% of terrestrial resources are being effectively managed through site-specific IWMPs.

8. Water Quality Beach Sign Project

Objective:

To collect data on the physical, chemical, bacteriological, and biological status of CNMI waterbodies so the type and sources of pollution impairing these waters may be identified. These data are analyzed to determine which waterbodies are impaired and in need of restoration on Tinian and Rota Beaches.

WQS/NPS staff will collaborate with other resource agencies and the community to base work on Integrated Watershed Management Plans (IWMP) to address the sources of pollution, thus ensuring that CNMI water bodies are restored to a swimmable and fishable state, in compliance with CNMI WQS.

Project Description:

Posting educational Water Quality Beach notification signs around Tinian and Rota's most frequented beaches are considerably needed to inform public health and awareness regarding current water conditions in compliance of the Clean Water Act (CWA) Section 106 and the BEACH Grant requirements under BECQ's CNMI Water Quality/NPS program management.

CNMI beaches and surrounding waters are heavily used on a daily basis by tourists, fishermen, and the general public. These people depend upon clean waters for their health and livelihood. Increased development over the years has led to more upland runoff and pollutants adversely impacting CNMI waterbodies.

The beach advisory signs will inform the public that improper land use and farming practices, failing sewage delivery systems and septic systems, runoff from secondary coral roads, and urban runoff are all major contributors to nonpoint source pollution that flow through CNMI watersheds and into the near shore environment.

Urban runoff has drastically increased over the past five years in proportion to rapid development on the islands of the Saipan, Tinian and Rota. In the past, little consideration was given to planning for the control of stormwater or urban runoff from impervious surfaces. Most development in the CNMI occurred prior to the implementation of stormwater management requirements, and proper mapping of infrastructure location. As a result, failing septic systems, and illicit hookups to existing sewer collection systems and/or storm drains, has led to untreated wastewater indirectly infiltrating into groundwater or overflowing and discharging to the near shore.

Short-term goals:

1. Community members and colleagues are fully aware of beach flag advisories in 2024-2028;
2. Continue to send press release to DEQ Tinian in order to update beach advisory flags in 2024-2028;

3. Encourage DEQ partners to educate Tinian and Rota visitors, frequent beach goers, fishermen and the public about significance of beach signs that connects to protecting the health of the waters and the effects of NPS contribution 2024-2028;
4. WQS/NPS, Tinian and Rota DEQ staff focus on prioritizing duties and responsibilities in applying the DEQ Laboratory Quality Assurance technical support and knowledge of standard operating procedures on proper calibration, maintenance and handling of YSI probe meter in 2024-2028;
5. WQS/NPS, Tinian and Rota DEQ staff continue to apply existing water quality samples collection routine using appropriate YSI parameters measuring units: Temperature, PH, DO and Salinity to determine natural or physiological condition of the waters in 2024-2028;
6. Share the value of press releases for beach advisories at community events: Environmental Expo, Oceans Month annually and in other opportunistic activities by 2024-2028.

Long-term goals:

1. Inform public that improper land use, farming practices, failing sewage delivery systems and septic systems, runoff from secondary coral roads and village water runoff are all major contributing factors to pollution that flow through CNMI watersheds and in nearshore environment; use this awareness to share information through social media accounts: DEQ website (QR code on beach sign), Facebook, Instagram, cnmi.waterquality@gmail.com listserv, etc.; and drive multi-agency efforts to prevent pollution impacts, and restore impaired water bodies protected designated uses (DU) in 2024-2028;
2. Perform QC assurance measures to reflect the water quality microbial data through laboratory analysis by 2024-2030.

Measures of Success

Measures of success will be the number of beach signs installed at frequently visited sites, and web-tracking visits to the QR-linked webpage. Success will also be measured if previously 303(d) listed waters on Tinian and Rota which get beach signs, attain “fishable” and “swimmable” Designated Uses.

The DEQ webpage will include a statement explaining the most common sources of enterococcus contamination in the CNMI are from nonpoint sources including improper land use and farming practices, failing sewage delivery systems and septic systems, unmanaged pet/feral animal waste, runoff from secondary coral roads, and urban runoff. These various NPS pollutants flow through CNMI watersheds and into the nearshore environment, impacting water quality and resulting in beach sites that exceed the CNMI Water Quality Microbial Standards.

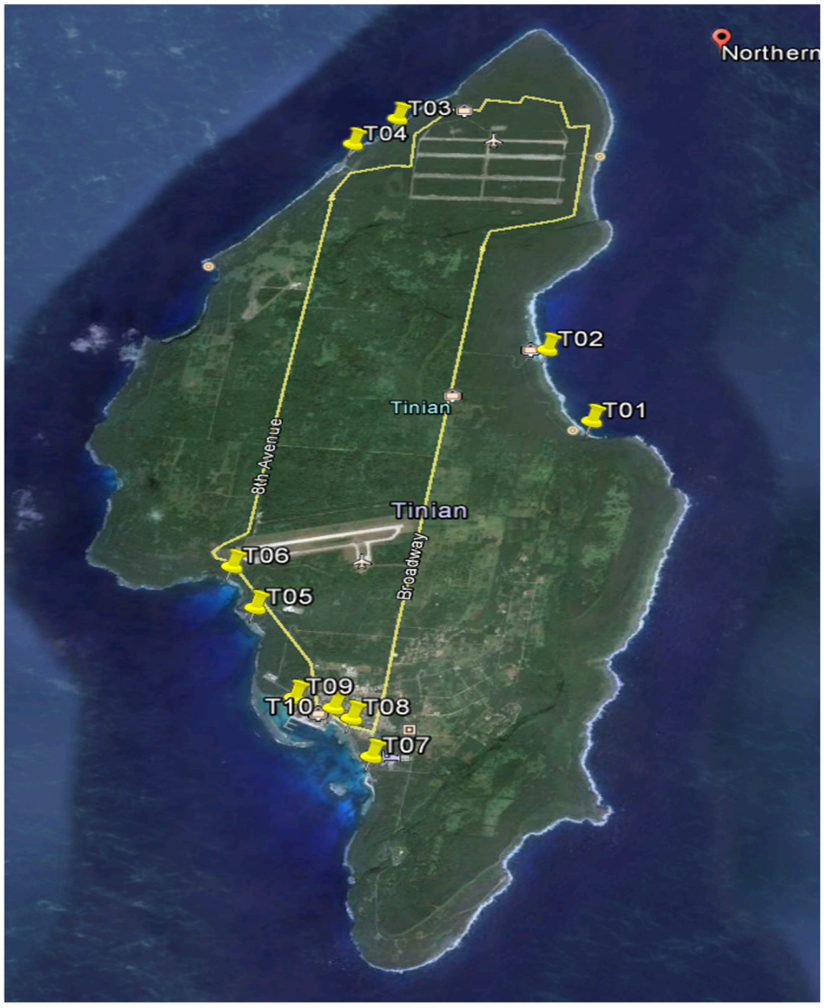
Cost Estimate:

$15,000.00 for Mounted Beach signs-printing of materials with lamination on aluminum board with metal post, 3”x 1.75” Tubular, 3/16”, changeable aluminum plate with bracket including full installation on site. Proposing to install signs at 12 of Tinian and Rota’s most frequented beach sites. Cost estimation includes about $1,000/per sign plus additional installation costs.

BEACH Monitoring Activities

In FY 2024 – FY 2028, WQS/NPS will continue to monitor Tinian (FIGURE 13 with 11 sites) along with each of the 38 most frequented beaches on Saipan's west coast weekly. The six less frequented beaches on the northeast and southeast coasts of Saipan are monitored less frequently along with the other less frequented beaches of Mañagaha (with 11 sites), and Rota (FIGURE 15 with 12 sites). These BEACH sites are monitored on an eight (8) week rotational sampling schedule.

Figure 16. Tinian BEACH Monitoring and Notification Sites



There are 11 sampling sites for Tinian BEACH Monitoring including a new beach monitoring site called the Chigit Beach. Tinian is a less densely populated island and sites are monitored on a rotational eight (8) week sampling schedule. Rota has one designated MPA, the Sasanhaya Bay Fish Reserve (Sabana/Talakhaya/Palie Watershed, Segment #2). Tinian also has one MPA, the Tinian Marine Reserve (Makpo, Segment #9). However, given the scarcity of Rota and Tinian's land and natural resources, and the increase in military exercises on and around these islands, every effort should be made to provide the CNMI with proportionate resources to establish baseline contaminant levels, and for monitoring

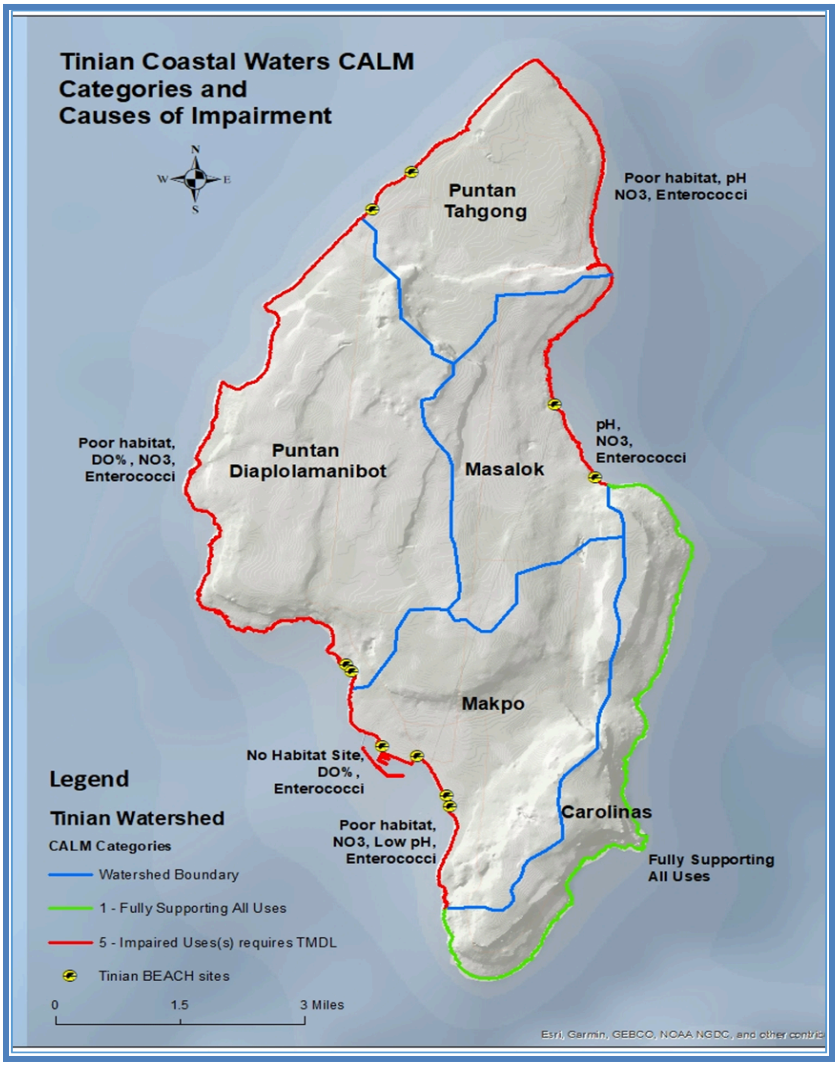
these areas to ensure that DoD is held accountable for commensurate mitigation and restoration of impacted leased lands and water bodies.

TABLE I. Aguigan and Tinian's Coastal CALM Categories

Watershed	Seg ID	Category							Total Assessed
		1	2	3	4a	4b	4c	5	
Aguigan Watershed Coastal (Miles)									
Aguigan	CN6						8.2		8.2
Total Aguigan Category miles							**8.2**		**8.2**
Tinian Watershed Coastal (Miles)									
Masalok	CN7							3.5	3.5
Carolinas	CN8	10.4							10.4
Makpo	CN9							3.0	3.0
Makpo Harbor	CN9H							1.5	1.5
Puntan Daiplolaanibot	CN10							9.9	9.9
Puntan Tahgong	CN11							6.4	6.4
Total Tinian Category miles		**10.4**						**24.3**	**34.7**
TOTAL AGUIGAN AND TINIAN COASTAL MILES									**42.9**

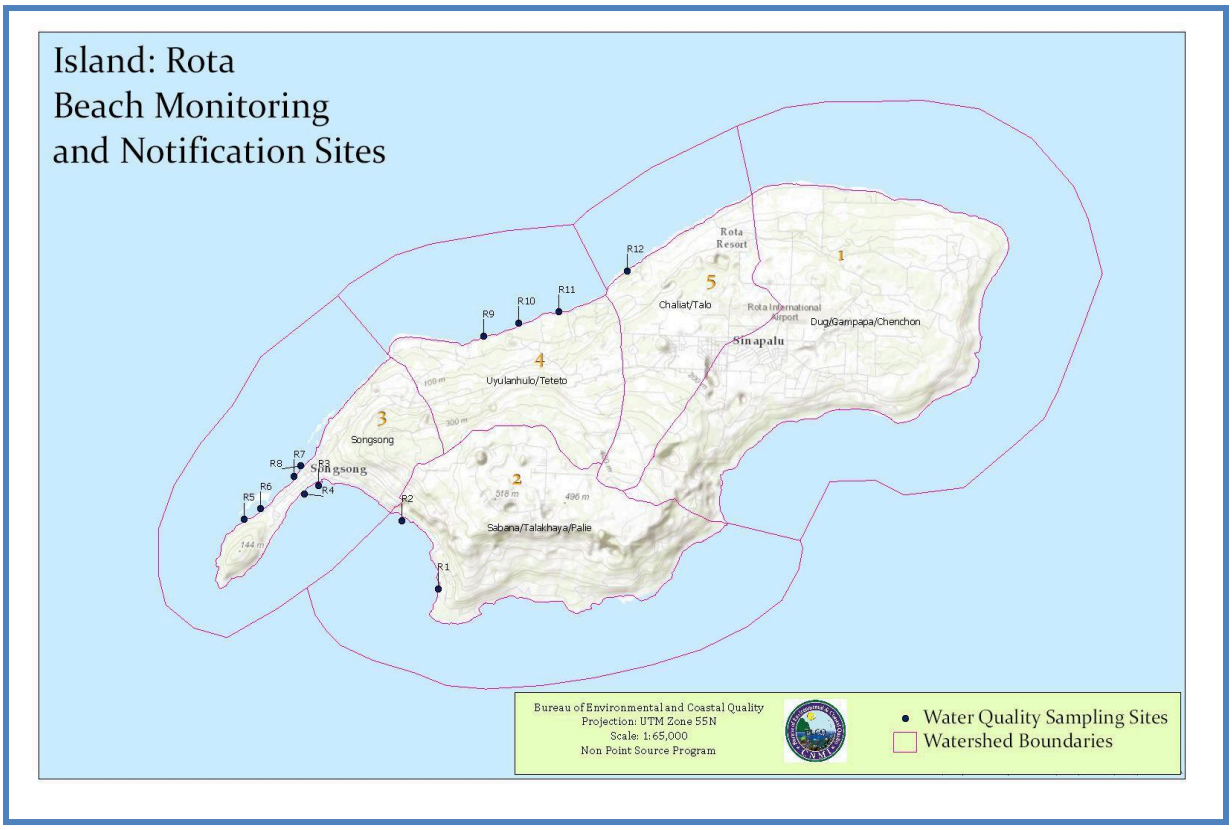
Figure 17., on the following page maps Tinian watersheds' CALM Categories and the various causes of coastal water impairment.

Figure 17. 2022 Tinian Coastal CALM Categories and Causes of Impaired Designated Uses



The increase in Tinian's violations of the CNMI Water Quality Standards (WQS) for Enterococci were associated with sample contamination and improperly disposed human wastewater. A review of sampling protocols was required of all responsible staff, and a reduction in violations were seen thereafter at all but two BEACH sites. The Tinian Program Manager investigated what may have caused contamination at the remaining sites and discovered in December 2020 that the private wastewater pumper truck company contracted by Department of Defense (DoD) for collecting and disposing of waste from the US Navy Construction battalion's "Seabees'' camp was not always disposing of it in the permitted leaching field. Instead, the company was disposing of the wastewater at the Tinian dump, upland and in close proximity to the sites. The company was notified of this violation, and percent violations dropped from a collective 33% in FY 2020, to 5% in FY 2021. The company continues to be closely monitored. *(pg. 26 of 267 in 2022_Integrated Report)*

Figure 18. Rota BEACH Monitoring and Notification Sites



The 8-week rotating schedule couples Saipan's east coast beaches and Rota's beaches together, and Mañagaha and Tinian beaches together. When one pair of islands are being monitored weekly, the other pair will only be monitored once a month for the entire 8-week cycle. After the 8-week cycle ends, the paired islands are swapped. In so doing all beach sites are sampled through the course of a season, meeting staffing requirements, boat availability for transport, and other budgetary constraints.

This ensures that water quality data are collected from all recreational beaches on at least a quarterly basis to capture seasonal changes.

TABLE II. Eight (8) Week Rotational BEACH Sampling Schedule

EPA Beach ID#	BEACH Identifier	NAME	ISLAND	Weekly Monitoring	Rotational Monitoring
MP614022	NEB 01	Grotto Cave	Saipan		X
MP6211534	NEB 02	Bird Island Beach	Saipan		X
MP905261	NEB 03	Jeffery's Beach	Saipan		X
MP106409	NEB 04	Old Man by the Sea	Saipan		X
MP	NEB 05	Marine Beach	Saipan		X
MP677470	NEB 06	Tank Beach	Saipan		X
MP222069	NEB 07	Hidden Beach	Saipan		X
MP706463	NEB 08	North Laulau Beach	Saipan		X
MP227159	NEB 09	South Laulau Beach	Saipan		X
MP412521	NEB 10	Obyan Beach	Saipan		X
MP455792	NEB 11	Ladder Beach	Saipan		X
MP453911	NEB 12	Unai Dangkulo Beach	Saipan		X
MP743331	MG 01	Dock	Managaha		X
MP669454	MG 02	Managaha 02	Managaha		X
MP125186	MG 03	Managaha 03	Managaha		X
MP3899013	MG 04	Managaha 04	Managaha		X
MP631194	MG 05	Managaha 05	Managaha		X
MP652589	MG 06	Managaha 06	Managaha		X
MP103086	MG 07	Managaha 07	Managaha		X
MP329890	MG 08	Managaha 08	Managaha		X
MP290958	MG 09	Managaha 09	Managaha		X
MP651320	MG 10	Managaha 10	Managaha		X
MP164736	MG 11	Managaha 11	Managaha		X
MP664077	TB01	Unai Masalok Beach	Tinian		X
MP364654	TB02	Unai Dangkulo	Tinian		X
MP319694	TB03	Unai Babui	Tinian		X
MP330050	TB04	Unai Chulu	Tinian		X
MP764248	TB05	Leprosarium Beach I	Tinian		X
MP954165	TB06	Leprosarium Beach II	Tinian		X
MP138155	TB07	Tachogna Beach	Tinian		X
MP746300	TB08	Taga Beach	Tinian		X
MP746300	TB09	Harbor	Tinian		X
MP575470	TB10	Kammer Beach	Tinian		X
	TB11	Chigit Beach	Tinian		X

Sampling is conducted by teams of at least two staff for safety reasons, and requires approximately half the day for samples to be collected, shipped to, and received by the DEQ Laboratory within the designated holding times for *Enterococci* and other parameters.

The water quality parameters tested for nutrients were revised in FY 2016, because existing data showed that Ammonia, and Total Phosphorus (P) levels were rarely above method detection limits. In addition, DEQ's Environmental Surveillance Laboratory was unable to test for these parameters, and paying for off

island analyses was costly with little information gleaned from the data generated. Therefore, the nutrient water quality samples now collected are limited to those for which the DEQ Laboratory has completed capability studies. These include Orthophosphate, Nitrate + Nitrite as N, Nitrite as N, and Nitrate as N. BECQ scientists use these parameters to make defensible inferences concerning nutrient loading and its impacts to CNMI waters.

Other parameters that will be monitored in FY 24 - 28 include pH, salinity, dissolved oxygen, temperature, turbidity, total suspended solids, and *Enterococci*. All beach monitoring data is entered into the WQS/NPS database and submitted electronically to EPA each year.

1.1.1. Public BEACH Notification Activities

The WQS/NPS determines when water quality exceeds the CNMI WQS and notifies CNMI residents and visitors in a publicized beach advisory. Advisories state that the level of Fecal Indicator Bacteria, *Enterococci* exceeds the WQS indicates that exposure to these waters may pose a health risk to people recreating within the water surrounding the specified beach site.

Marine water samples are collected weekly by WQS staff and tested by DEQ's Environmental Surveillance Laboratory to monitor the chemical, physical and microbial quality of our near shore waters that surround the most popular frequented beaches in the CNMI including the eleven (11) beach sites on Tinian Island.

Beach Advisory notifications are publicized on the DEQ website and on the "CNMI Waters" Facebook page informs the public that improper land use and farming practices, failing sewage delivery systems and septic systems, runoff from secondary coral roads and urban runoff are all major contributors to pollution that flow through CNMI watersheds and into the near shore environment. Notifications are also emailed to individuals on the Water Quality Report list, and faxed to hotels, local newspapers, TV and radio stations, and posted on signs erected at the most frequented beaches on Saipan.

If a "red flag" occurs in an area that is highly used like in front of hotels, WQS/NPS staff will go to the beach on that same day to resample the beach. This allows BECQ to notify the public as soon as possible when potential pathogens are no longer present and it is once again safe to recreate in these waters.

Beach Advisory signs are changed at least weekly or more often as water quality results become available from DEQ Laboratory. The signs have removable colored placards which specify water conditions: ***Red –*** ***"****Do not swim within 300 ft. of the sign"* or ***Green –*** ***"****All clear, enjoy the water".* This is in accordance with CNMI Local Law 8-6.

If funding allows, the plan is intended to replicate the Red and Green flag beach placards advisory concept that have been successfully achieved over the years in Saipan and extend it to Tinian and Rota at most visited beaches for community awareness.

All beach notifications are entered into the WQS/NPS database and submitted electronically to EPA each year.

Figure 19. BEACH Advisory Notification Signs

Many of the selected beach sites have been monitored continuously since the late 1980's. That is why some beach sites bear the name of an old hotel that has since been renamed under new ownership. The original site names are used to ensure that these sites remain associated with historical data kept within the BECQ database and in the US EPA databases, and US EPA BEACON website.

The microbial fecal indicator, Enterococci, is used to assess the presence of human or animal waste. Enterococci levels that exceed the CNMI Water Quality Standards may indicate that there is a health risk associated with recreating in marine waters at these sites.

Furthermore, additional water samples are taken upon reef flats surrounding these islands by WQS/NPS and DCRM's Marine Monitoring Team (MMT). BECQ also conducts biological assessments of the reef and benthic habitat at these sites. This biological data combined with Water Quality Data, and other studies conducted by federal and local partners are used to make a comprehensive assessment of the health of CNMI marine waters. Findings are provided to the US EPA, Congress and the general public in the biennial CNMI 305(b) and 303(d) Water Quality Assessment Integrated Report.

All water bodies assessed as not attaining their Designated Uses (of "fishable and swimmable") are put on the EPA 303(d) list of impaired waters. Impaired waters are then required to have a Total Maximum Daily Load (TMDL) set in order for natural resource managers to work towards their restoration. The TMDL identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards. The impaired water bodies on Saipan have a TMDL set for bacteriological contamination, as of December 2017. Each of these impaired water bodies also have a "Report Card" to provide policy makers and managers direction in restoration efforts.

In addition, there is a growing need to expand water quality and biological assessments for the Northern Islands, especially on Pagan where the US Military has proposed expansion of training exercises. Baseline surface and ground water quality is lacking for Pagan Island.

OUTREACH AND EDUCATION

Continued education, training, and outreach activities are key elements in keeping government policy makers, BECQ staff, and the general public informed of the WQS/NPS branch's roles and responsibilities. The long term goals include changes in human behavior that lead to polluted runoff prevention, reduction, and control measures. Below are the outreach and education activities that the WQS/NPS will participate in fiscal years' 2024 through 2028.

Planning Meetings with Policy Makers

The BECQ Administrator and WQS/NPS Manager will schedule or participate in at least quarterly meetings with the House of Representatives Natural Resources Committee, newly elected officials, and Watershed Action Groups to discuss NPS issues; emphasize the need for BMP management; and to plan to address these issues. The 303(d) list of impaired waters will be shared for making informed decisions as to where fiduciary expenditures would be most beneficial for preventing NPS of pollution. Updates of regulations and policies will be communicated at Planning and Development Advisory Council (PDAC) and planning task force meetings for incorporation into long-term plan and Smart, Safe Growth guidance updates.

Environmental Awareness Month

WQS/NPS staff will help organize and conduct Environmental Awareness Month (EAM) activities each April with schools, other environmental agencies, and the local government. WQS/NPS remains actively involved with EAM projects, such as the Environmental Expo, Youth ("Tasi-to-Table") Fishing Club, International Coastal Clean-up and Oceans Month.

Marine Debris and Litter Control

The WQS/NPS program will continue to raise community awareness of anti-litter laws and about land-based sources of pollutions' contributions to marine debris. BECQ's Litter Control Officers will vigorously enforce litter control laws.

WQS/NPS will also organize and take part in BECQ's volunteer *monthly* "Clean Up Brigade" activities, and other cleanups in efforts to diminish CNMI's contribution to marine debris.

Other Community Outreach

WQS/NPS will implement pilot NPS demonstration projects consistent with the IWMPs to reduce TMDLs and raise community awareness about NPS BMPs to address land-based sources of pollution to prevent

or eliminate pollution from contaminating stream systems and other water bodies. Outreach activities have included working with the CNMI public school system on rain garden installation, raising awareness at reducing the impacts of runoff and nonpoint source pollution, and giving presentations on water quality and nonpoint source pollution to students.

PROFESSIONAL DEVELOPMENT

WQS/NPS will take part in workshops and conferences to hone skills and make network connections with other states and territories, whenever possible. The workshops and conferences that will be held during the next 5-yrs include:

- *National Nonpoint Source Training Workshops*
- *Annual National Training Workshop on Water Quality Data, Assessment, and Plans,* as offered by US EPA, at the National Conservation Training Center (NCTC) Shepherdstown, WV
- *Water Quality Standards Academy,* Washington, DC
- *Pacific Islands Environmental Conference*
- *Provide access to DEQ staff including Rota and Tinian staff for sedimentation and erosion-control management -related professional development training.*
- *Other NPS trainings and workshops as appropriate*

ADMINISTRATION

The WQS/NPS Branch will compile a Mid-Year report at the end of every April, and an End of Year report at the end of January each year. These reports will be provided to EPA Region 9.

Reports will be developed annually for the purpose of tracking program progress against the 5-year NPS plan.

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APPENDIX I Table III. 2024-2028 Strategic Planning and Implementation

2024-2028 Strategic Planning and Implementation Schedule

NOTE: All project activities are projected in a quarter-specific manner to provide schedule flexibility if unforeseen events may arise - or to indicate annual work cycles

Plans	Activities	2024				2025				2026				2027				2028			
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
1. Tier II Heavy Metal Fish Tissue Study Prior to TMDL	Identify funding to conduct Tier II Heavy Metal study as part of TMDL	■																			
	Post Scope of Work for Request for proposals			■	■		■	■	■		■	■	■		■	■			■	■	■
	Select Contractor familiar with EPA Guidance			■	■		■				■				■				■		
	Contractor draft survey and work plan			■	■			■				■				■				■	
	BECQ approves finalized survey and work plan			■	■	■	■	■	■			■	■			■	■			■	■
	Contractor conducts survey, collects samples and ships to lab for analysis			■	■			■	■			■				■				■	
	Contactor submits draft Tier II BECQ and EPA comments by end of 2026			■	■	■		■	■	■		■	■	■		■	■	■			
	Contractor incorporates comments submits final study for approval			■	■			■	■			■	■			■	■			■	■
	EPA approves Tier II study for distribution to community partners by 2027				■				■				■				■				■

		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
2. PDM Storm Drain Guard Pilot Project (Garapan IWMP)	Identify funding for Educational signage about stormwater impacts to receiving waters																				
	Inspect storm drain guards's monthly, if maintenance is needed																				
	DPW Roads and Grounds maintains storm drain guards																				
	Statistical analysis of TSS and Turbidity levels before 2016 through 2028																				
	Install and maintain 20-25 storm drain guards at hotspots in Garapan																				
	Present report to Watershed Working Group and on social media																				
	Present report to public during annual Environmental Awareness and Ocean's Months																				
	Write up statistical analysis results into a report on Storm Drain Guard Pilot Project, potentially a success story through 2021-2028																				

		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
3. Green Infrastructure to Reduce Nonpoint Source Pollution (Achugao IWMP)	Identify potential funding for Green Infrastructure to Reduce Nonpoint Source Pollution in Achugao Priority Watershed Project																				
	Plan 1st retrofit existing development with green infrastructure e.g.; (schools, hotels, industrial area, and roads etc.)																				
	Work closely with WEEC to aggressively enforce erosion control measures at construction sites to rectify problematic areas																				
	Collaborate with DEQ Engineer to update technical design for stormwater BMPs & wastewater erosion and control manuals to help address Nonpoint Source Pollution																				
	Apply standards to 401 WQS certification requirement for proposed development, large renovations, and road improvement projects for any potential discharge into CNMI waters																				
	Seek education and outreach opportunites for the community and hotel guests to promote sustainable and locally appropriate initiatives																				
	Increase maintenance capacity for drainage system to develop an inspection and maintenance schedule with hotel staff and maintenance																				
	Hire/Train more staff on maintenance of green infrastructure development and MS4 program requirements in collaboration with DPW																				

		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
4. Constructed Wetland at Navy Hill/AMP (Garapan IWMP)	Identify load reduction model based on WQ data e.g. # (SSO, septic systems, livestock estimates)																				
	Partner w/ WWG and AMP to designate tennis courts area for wetland restoration design																				
	Develop wetland NPS outreach guide w/ AMP Rangers																				
	Constructed wetland plans will be done in house with the assistance from Watershed Coordinator and BECQ Engineers in 2025-2026;																				
	Post Scope of Work; Request for Proposals before project implementation																				
	Select contractor w/ constructed wetlands & information signage																				
	Partner w/ Garapan Elementary School and DLNR Forestry; wetland plants/saplings																				
	Students gain hands-on experience planting and wetland functional benefits in																				
	Contractor will build wetland and install informational signs																				
	NPS rangers use Wetland NPS outreach guide to provide tips on how to conserve and protect wetlands; 2027-2028																				
	Schedule school visits to the wetland starting in Environmental Awareness Month																				

		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
5. Dogas Stream Restoration and Protection (Achugao IWMP)	Increase the number of community stewardship activities in Tanapag and San Roque location schools through Watershed Warrior Program and active members in stream restoration projects (e.g., plantings, rain gardens, trash removal in streams, WQ monitoring) 2024-2028																				
	Collaborate with Watershed Coordinator to incorporate wildfire awareness & prevention in northernmost areas of Tanapag and San Roque in 2024-2028																				
	Increase public opportunity to use the streams in its natural state for potential recreational purposes 2024-2028																				
	Include the application of Erosion control and sedimentation on roads handout materials impacting the streams for handouts to homeowners and businesses 2024-2028																				
	Partner with DLNR Forestry to plant native and non-invasive plants appropriate to cover bare areas 2025-2028																				
	Install Educational signage about NPS contributors that flow through streams and water quality impacts by 2027																				
	Continue to work with DCRM Watershed Coordinator and other partnering agencies to align NPS goals through embedded Achugao watershed restoration goals																				

		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
6. ID IWDS for repairs (Garapan IWMP)	Address immediate wastewater violations 2024-2028																				
	Conduct On-Site Disposal Survey in Garapan, Navy Hill, and Chinatown 2024-2028;																				
	Conduct educational outreach on IWDS and public sewer connections 2024-2028;																				
	Assess possible wastewater violations within Garapan, Navy Hill, and Chinatown 2024-2028;																				
	Provide guidance or enforcement actions for wastewater compliance within Garapan, Navy Hill and Chinatown 2024-2028;																				
	Identify commercial businesses that are using IWDS within Garapan, Navy Hill, and Chinatown 2024-2028;																				
	Coordinate with CUC to have commercial entities on IWDS connect to public sewer if possible or available 2024-2028;																				

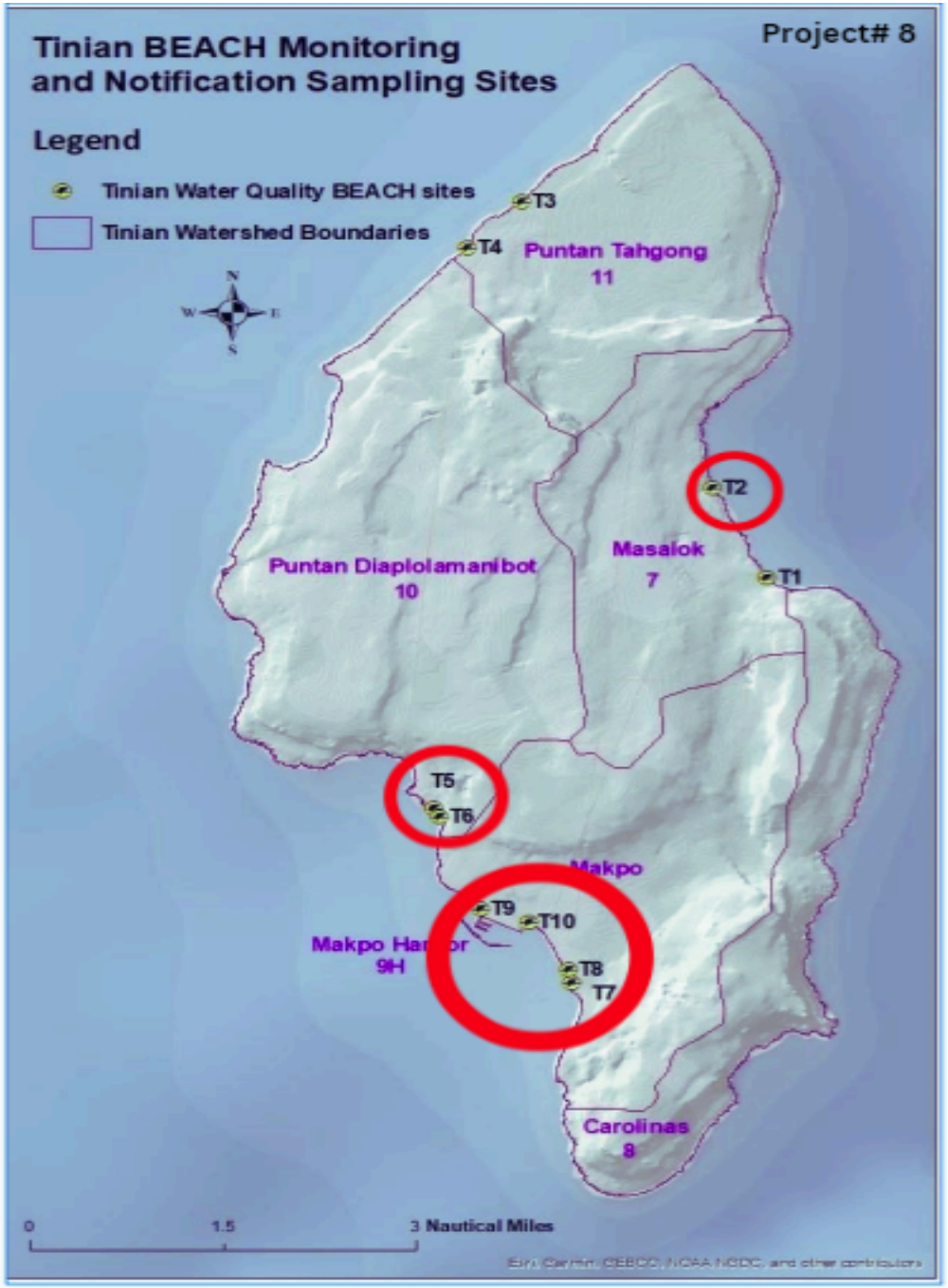
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
7. High Priority Projects: Rota, Tinian, and Northern Islands as Opportunities Present Themselves	Share information and ensure inclusion of NPS leading practices in planning and project development by regularly participating in planning and project update discussions through All Planners, PDAC, Coral Work Group, NOAA's Coral Reef Conservation Program (CRCP) Local Working Group (LWG) and Watershed Working Group meetings																				
	Share BMPs and other project concepts at events: Environmental Expo, Youth ("Tasi-to-Table") Fishing Club and Oceans Month annually, etc.																				
	Support collection and integration of mapping stream visual data into permitting and other resource management systems in 2025 by working with planning partners to identify water, wastewater, and stormwater utilities upgrades to achieve water quality, NPS and land use planning goals and objectives																				
	By 2025, watershed assessment and capacity analysis will develop initial recommendations for a priority watershed program for the island of Tinian																				
	Conduct watershed mapping in the Northern Islands (Pagan) to identify NPS hotspots and critical drinking water sources																				

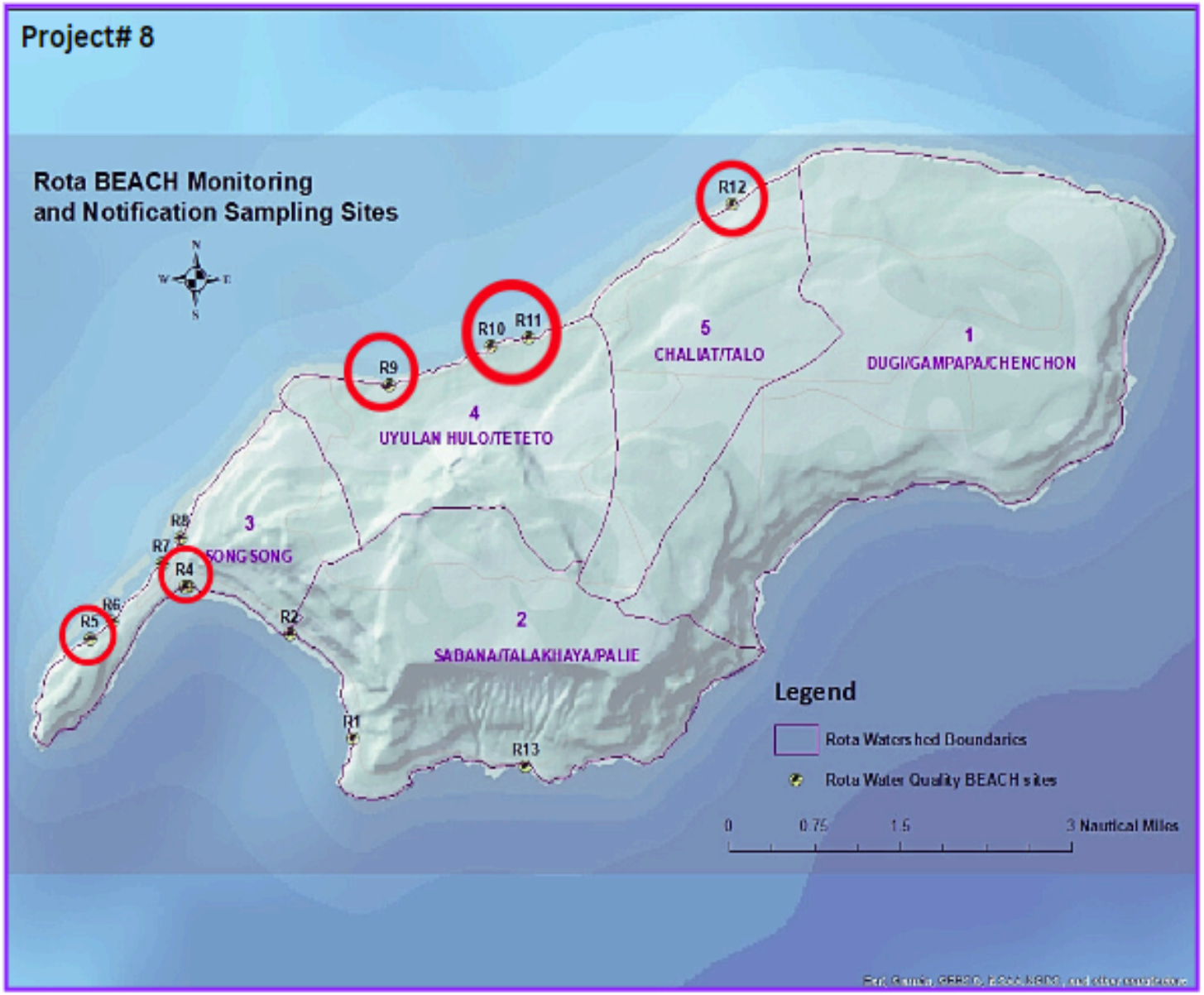
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
8. Water Quality Beach Sign Project (High Priority Project)	Provide map of frequented monitoring in Tinian and/or Rota beach sites on WQ monitoring team website																				
	Post scope of work for beach sign installation																				
	Select best vendor familiar with sign installation																				
	Vendor provides specs on quote for beach sign installation																				
	Vendor submits blueprint of beach sign installation																				
	BECQ submits approval; Give notice to proceed w/ project																				
	Work closely with vendor until final completion and installation of 12 signs on Tinian and Rota's most popular beaches																				

APPENDIX II

Table IV. 2024-2028 Project locations

FIGURE 1 . CNMI Watersheds (Saipan, Tinian, Rota & Pagan Island)


Tinian BEACH Monitoring
and Notification Sampling Sites
Project# 8
Legend
Tinian Water Quality BEACH sites
Tinian Watershed Boundaries
T3
T4
Puntan Tahgong
11
T2
Masalok
7
T1
Puntan Diaplolamanibot
10
T5
T6
Makpo
T9
T10
Makpo Har or
9H
T8
T7
Carolinas
8
0
1.5
3 Nautical Miles


Project# 8
Rota BEACH Monitoring
and Notification Sampling Sites
N
W
E
S
R12
R10
R11
R9
5
CHALIAT/TALO
1
DUGI/GAMPAPA/CHENCHON
4
UYULAN HULO/TETETO
R8
R7
R4
3
SONGSONG
R6
R5
R2
2
SABANA/TALAKHAYA/PALIE
R1
R13
Legend
Rota Watershed Boundaries
Rota Water Quality BEACH sites
0
0.75
1.5
3 Nautical Miles


Pagan
Project# 7
Sanhalom "Inner" Lake
North Volcano
Lagona Sanhiyong
Mt. Pagan
Bandeera Peninsula
Shomushon Airfield
Ugairididi Beach
Togari Rock
Maru Mt.
Togari Mt.
South Volcano
0
0.5
1 Miles