

# **Watershed Working Group (WWG)**

---

July 29, 2022 Quarterly  
Meeting







[ABOUT DCRM](#) | [CONTACT US](#) | [OUR PROGRAMS](#)

[Home](#) » [Our Programs](#) » [Watershed Management](#) » Watershed Working Group

## Watershed Working Group

Watershed Working Group (WWG) 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 typically meets every two months to discuss ongoing projects and request review or recommendations on specific issues.

Please check the [CRM calendar for the next WWG meeting](#). Please contact our Watershed Coordinator, Zachary Williams ([zwilliams@dcrm.gov.mp](mailto:zwilliams@dcrm.gov.mp)) for any further information or to be added to the email list.

### MEETING MATERIALS AND RESOURCES

Keep up to date with presentations, materials and other group updates! Open "Notes & Updates" for further details and links relevant to CNMI's watersheds.

August 3, 2021

- [August 3, 2021. Notes & Updates](#)
- **Presentations:** Zak Williams (DCRM Watershed Coordinator): Watershed Updates; Mary Fem Urena (DCRM Coastal Planner): Better Buildings Update;

<https://dcrm.gov.mp/our-programs/water-quality-and-watershed-management/watershed-working-group/>



The Watershed Working Group is a network of partners involved in watersheds planning, project implementation, research, and education.

Includes members from local and federal government agencies, NGOs, community groups, and other interested parties.

Typically meets quarterly to discuss issues relating to watersheds, in order to pool knowledge and networks towards better management and collaboration.



# Meeting Agenda

*Zak Williams* (DCRM)

- Watershed Updates
- Grant opportunities

*Anne Kitchell* (Horsley Witten Group)

- Achugao Watershed Management Plan (WMP) Updates

Roundtable Discussion

- Member updates, concerns, opportunities, etc.

Closing







# Watershed Warriors



Watershed Warriors Program provides place-based environmental and science learning for 4<sup>th</sup>-grade students at local schools within our priority watersheds.

- Previously implemented in Garapan, now Achugao (GTC Elementary School).
- 2021 group showed 49% improvement in understanding overall, with 80% improvement in recognition of Achugao watershed.
- 2022 group showed 50% improvement in understanding overall, with 84% improvement in recognition of Achugao watershed.
- Adapting and expanding program in 2023.
  - Final year under grant.



# San Vicente Rain Garden



Renovated and replanted on July 1, 2022.

➤ Thanks Summer Interns and BECQ volunteers!

Continuing focus on native wetland species (e.g. *Cyperus* sedges).









# Additional Raingardens



Moving forward with new raingarden site locations:

- Tanapag Middle School (Achugao watershed)
- AMP / Boating Safety (West Takpochao watershed)





# Mangrove Nursery



Permitting ongoing, but site selected at American Memorial Park.

➤ Supported by National Park Service.

Project on-track to begin propagating next fiscal year.









# Grant Opportunities



Several BIG grant opportunities upcoming:

NOAA - \$2.96 billion via Infrastructure Bill

- Coastal Zone Management Habitat Protection and Restoration Grants (\$35 million)
- National Estuarine Research Reserve System Habitat Protection and Restoration Grants (\$12 million)
- Marine Debris Removal (\$56 million)
- Marine Debris Challenge Competition (\$16 million) [offsite link](#)
- Marine Debris Community Action Coalitions (\$3 million)
- **Transformational Habitat Restoration and Coastal Resilience Grants (\$85 million)**
- **Coastal Habitat Restoration and Resilience Grants for Underserved Communities (\$10 million)**





# Grant Opportunities



Several BIG grant opportunities upcoming:

➤ NOAA Transformational Habitat Restoration and Coastal Resilience Grants

- \$85 million is available
- Funding requests between \$1 million – \$15 million
- Award periods up to 3 years (potential of up to 5 years if necessary)
- Application deadline: September 6, 2022.
- Opportunity # NOAA-NMFS-HCPO-2022-2007195
- More information [here](#).

“selected partners will use these funds to implement **locally led habitat restoration actions**... using approaches that **enhance the resilience of communities to climate hazards**. Funding will prioritize habitat restoration actions that rebuild productive and sustainable fisheries, contribute to the recovery and conservation of threatened and endangered species, use **natural infrastructure to reduce damage from flooding and storms**, promote resilient ecosystems and communities, and yield socioeconomic benefits. The funding priorities and selection process of this opportunity emphasize support for **underserved communities**.”



# Grant Opportunities



Several BIG grant opportunities upcoming:

➤ NOAA Coastal Habitat Restoration and Resilience Grants for Underserved Communities

- \$10 million available
- Funding requests between \$75,000 – \$1 million
- Award periods up to 3 years (potential of up to 5 years if necessary)
- Application deadline: September 30, 2022
- Opportunity # NOAA-NMFS-HCPO-2022-2007354
- More information [here](#).

“The opportunity is focused on **building organizational capacity and/or supporting restoration activities** that benefit **underserved communities and enhance their resilience to climate hazards**. Meaningful engagement of underserved communities is intended to ensure that communities are integral to the visioning, decision-making, and leadership for coastal habitat restoration projects; to ensure that the scope of such projects are inclusive of the priorities and needs of communities; and/or to ensure that the benefits of such projects flow back to underserved communities. Potential activities can include: 1) Capacity building, and/or 2) Restoration project activities. There is **no non-federal matching requirement** for this funding.”



# Grant Opportunities



Several BIG grant opportunities upcoming:

## NFWF America the Beautiful Challenge 2022

- \$85 million available
- Application deadline: September 30, 2022
- More information [here](#).
- Subdivided into grant categories:
  - States, Territories, and Tribal Implementation Grants
  - Planning, Collaboration and Engagement for States, Territories and Tribes
  - Grants to Buffer and Benefit Public Lands
  - Private Forests, Rangeland and Farmland Grants

“ATBC will seek to fund projects across the following themes:

1. Conserving and restoring rivers, coasts, wetlands and watersheds
2. Conserving and restoring forests, grasslands and other important ecosystems that serve as carbon sinks
3. Connecting and reconnecting wildlife corridors, large landscapes, watersheds and seascapes
4. Improving ecosystem and community resilience to flooding, drought and other climate-related threats
5. Expanding access to the outdoors, particularly in underserved communities”



# Grant Opportunities



Several BIG grant opportunities upcoming:

## NFWF America the Beautiful Challenge 2022

- States, Territories, and Tribal Implementation Grants
  - Federal funding requests: between \$1 million – \$5 million
  - **No non-federal matching requirement**
  - Award periods up to 4 years
  - “projects that address the program priorities on public, Tribal, and/or private lands”
- Planning, Collaboration and Engagement for States, Territories and Tribes
  - Federal funding requests: between \$200,000 – \$1 million
  - **Non-federal match waived**
  - Award periods up to 1 year
  - “enhance local capacity to implement future on-the-ground”



# Grant Opportunities



Several BIG grant opportunities upcoming:

## NFWF America the Beautiful Challenge 2022

### ➤ Grants to Buffer and Benefit Public Lands

- Federal funding requests: between \$250,000 – \$1.5 million
- 50% matching requirement
- “projects that result in direct, on-the-ground conservation actions that benefit National Forests and DoD facilities”
- “DoD funds will be prioritized to Sentinel Landscapes or areas that advance the military mission (e.g., the Pacific region or directly supporting an installation) and projects must be in the vicinity of or ecologically related to a DoD installation or range. DoD funds may not be used for work directly on military lands. ”

### ➤ Private Forests, Rangeland and Farmland Grants

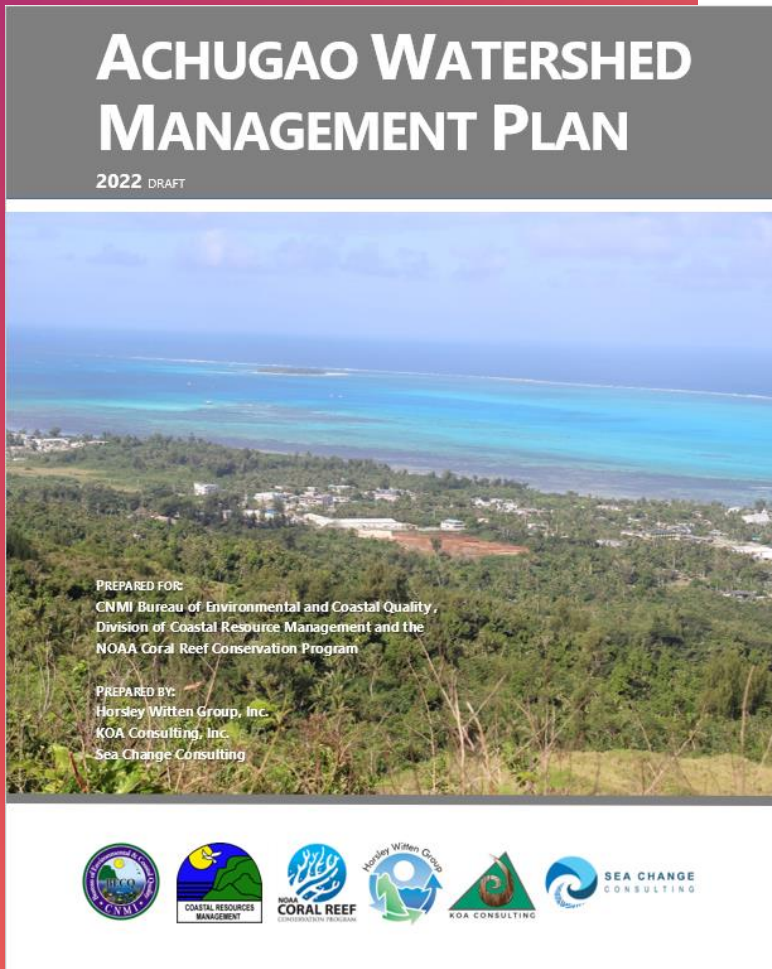
- Federal funding requests: between \$200,000 – \$ 500,000
- 20% matching requirement
- Award periods up to 3 years
- “support outreach and engagement with private landowners to advance voluntary conservation efforts on working lands that align with the NRCS Working Lands for Wildlife Framework and Initiatives”







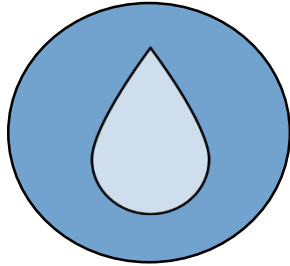
# ACHUGAO DRAFT WMP



- Existing Conditions and Pollution Sources—Complete
- Load Modeling & Restoration Potential—Complete
- Draft Implementation Strategy for Review—NOW
  - Goals and Objectives
  - Project Lists
  - Cost Estimates
  - Education and Monitoring
- Full Draft Plan for Review—Mid-August



## GOALS AND OBJECTIVES



1. Reduce watershed pollutant loads to Tanapag Lagoon by 30% through green infrastructure and better land use management.



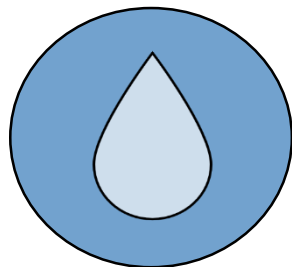
2. Restore 30 acres of native upland and wetland habitats through revegetation and invasive species management.



3. Empower watershed communities and promote stewardship through 30 engagement, advocacy, and educational activities.

30  
by 2030

# GOALS AND OBJECTIVES



1. Reduce watershed pollutant loads to Tanapag Lagoon by 30% through green infrastructure and better land use management.

- 1.1 Retrofit existing development with green stormwater infrastructure (e.g., schools, hotels, industrial area, and Middle Rd.)
- 1.2 Erosion control enforcement at construction sites (e.g., Imperial Casha)
- 1.3 Zoning requirements for sustainable development per community development vision
- 1.4 Strategic public land conservation to support watershed functions
- 1.5 Drainage infrastructure inspection and maintenance program (i.e., MS4 permit requirements)
- 1.6 Continued wastewater upgrades and maintenance



# GOALS AND OBJECTIVES



2. Restore 30 acres of native upland and wetland habitats through revegetation and invasive species management.

- 2.1 Upland Reforestation (e.g. priority wildfire sites in Wireless Ridge)
- 2.2 Stream and wetland restoration to improve flood resiliency and habitat (focus on areas near road culverts and at outfalls)
- 2.3 Mangrove restoration (see DCRM)
- 2.4 Priority reforestation (see Forestry)
- 2.5 Invasive species management

# GOALS AND OBJECTIVES



3. Empower watershed communities and promote stewardship through 30 engagement, advocacy, and educational activities.

- 2.1 Watershed warrior program to continue to engage schools and community groups in hands on restoration projects (e.g., plantings, rain gardens, trash removal in streams, WQ monitoring)
- 2.2 Wildfire prevention and outreach
- 2.3 Pollution prevention technical services for businesses in Lower Base
- 2.4 Link watershed improvements with recreational goals of SCORP and CNMI Hotel Sustainability Criteria
- 2.5 Increase opportunities for input in development permitting process, hazard vulnerability planning, restoration project designs, etc.























# PROJECTS

Inventory

Preliminary  
Ranking

Representative  
Projects

- Address goals
- Cost/benefit
- Implementation feasibility
- Diversity in type, location, ownership, etc

Site	Project Description	Planning Level Construction Estimate	Goals
As Agatan Stream & Wetland Restoration & Infrastructure Protection (AS-132)	Eliminate flows on Middle Rd. by redirecting through culvert under access drive; recreating a floodplain wetland to handle larger storms; providing treatment for runoff from impervious cover using green stormwater infrastructure; and improving habitat through invasive species removal and restoration of native riparian vegetation.	\$250,000-\$350,000	 
Tanapag Beach Park (AS-137)	Community-led resiliency design to design living shoreline, stormwater management system, recreational usage, and educational moments for park users.	\$170,000-\$250,000	 
Improving Stormwater Infrastructure at Tanapag Middle School (AS-153)	Reduce runoff volume at Tanapag Middle School by expanding capacity of onsite practices, installing additional practices, and fixing runoff bypass issues on Middle Rd. that are contributing to school flooding. Consider developing master drainage plans to meet coastal resiliency objectives for both schools in the watershed.	\$75,000-\$100,000	 
Imperial Casha Site Stabilization (AS-502)	Address erosion and sedimentation from > 10 acre clearing at stalled construction site. Involves replanting vegetated riparian buffers, hydroseeding exposed soils, and excavating existing sediment basins to restore capacity	\$25-\$50,000	 
Lower Base Pollution Prevention (AS-128 & AS-168)	Remove accumulated sediment in concrete swales and drainage structures along road; install sediment forebays and swales in the road right-of-way; identify structural and non-structural practices and prepare stormwater pollution prevention plans for each property to reduce off site contributions of sediment and other pollutants.	\$50,000-\$150,000	 
San Roque Green Streets (AN-300 & 301)	Utilize road median and right-of-way to incorporate street trees, stormwater management, and pedestrian/bike safety. There is also potential for additional stream and wetland restoration seaward of Middle Rd.	\$400,000-\$500,000	
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.	\$250,000-\$350,000	 
Aqua Resort Overflow Parking (AN-307)	Implement sustainable hotel stormwater practices with drainage improvements at unpaved overflow parking using permeable pavers, swales, and bioretention facility.	\$25,000-\$100,000	
Upland Reforestation	Reforestation of areas at the upper ridges of Achugao, converting fire-vulnerable grasslands back into native forest.	\$ 30,000	
Wildfire Outreach & Prevention	Island-wide environmental awareness campaign targeting one source of land-based sources of pollution (LBSP): wildfire and resulting erosion and sedimentation.	\$ 30,000	 
Watershed Warriors Program	Environmental education programming targeting 4 <sup>th</sup> grade students at Gregorio T. Camacho Elementary School in San Roque village.	\$ 15,000	 
Mangrove Nursery	Establish <i>in situ</i> mangrove nursery to propagate existing and extirpated mangrove species for reforestation efforts along Saipan	\$ 12,000	

AS-132 Stream/Wetland Restoration

Project Summary	
Subwatershed	As Agatan
BMP type	Constructed wetland
DA	13 acres (excludes stream contributing area)
IC	9 acres (70%)
Pollutant Removal	75% TSS
Ownership	Public/Private
Cost	\$250,000- \$350,000

**Conditions**  
At a historic textile manufacturing plant off Middle Road, the As Agatan stream and associated wetlands were altered/diverted when Middle Road was built and further diverted by factory construction. The stream was straightened with a concrete embankment, and it pops out onto the factory access road, ponding in at the intersection of Middle Rd. and flowing northward towards a large culvert where it formally crosses the road. As a result, stream base flow is continuously running along the Middle Rd. shoulder/gutter causing road damage and leading to flooding during rain events. The instream and buffer habitat have been impacted.

**Concept**  
The goal of this project is to restore more natural stream conditions and enhance the floodplain to better handle rain events and improve wildlife habitat. It involves adding a culvert under the access road, recreating a floodplain wetland that can safely manage base flows, and treatment of stormwater runoff from the road and factory impervious cover using green stormwater infrastructure to remove trash and sediment and other pollutants. Buffer enhancement should include removal of invasive species and the planting of native riparian buffer vegetation to improve wildlife benefits. Excluding stream contributions, this retrofit would need to manage over 9 acres of impervious cover.

**Other Considerations**  
Potential sewer line location, road and site ownership, and DPW buy-in are potential site



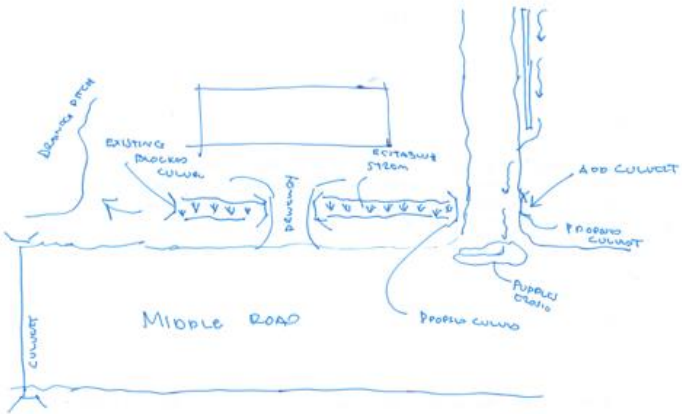
Consistent flooding along Middle Rd. could be alleviated with a stream/wetland restoration project.



Area of impervious cover estimated to this retrofit location. Any project design would need to be offline to accommodate stream flow.

challenges. Any project will need to accommodate stream flow by providing offline stormwater treatment. In addition, adjacent construction may influence the amount of runoff coming to this site.

A field concept sketch and schematic concept are shown below. A planning level construction cost estimate is included in the table below. This estimate is equivalent to a rough estimate at <25% design and does not include engineering, permitting, contingency, or land purchasing.



Field Sketch

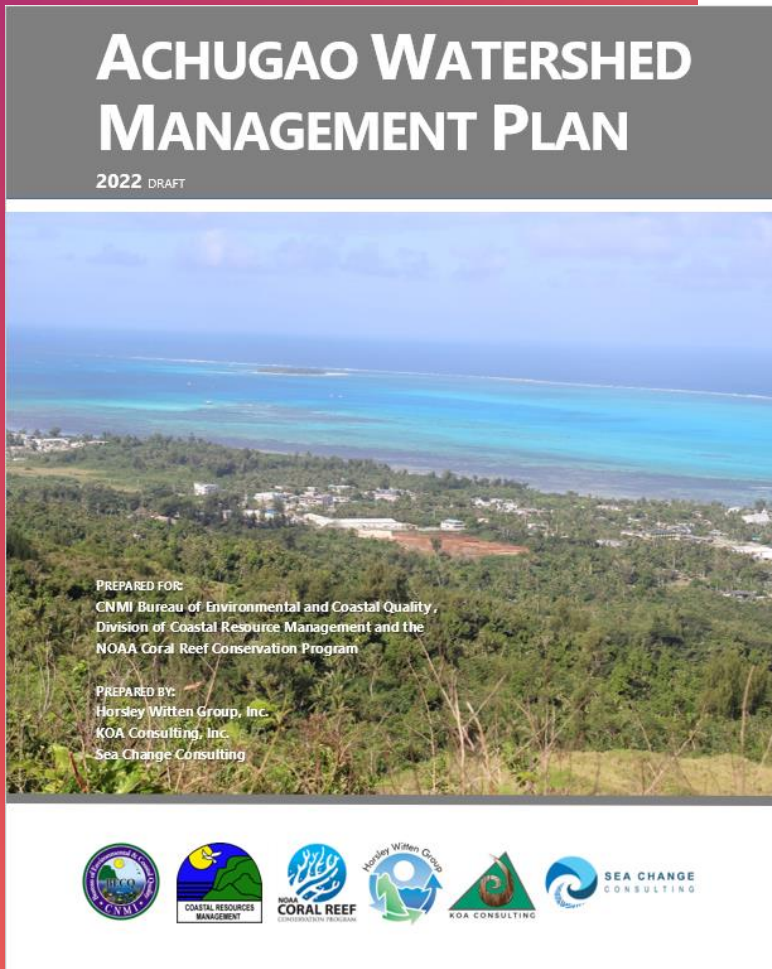


Conceptual Schematic

AN-132 STREAM RESTORATION			
ITEM	UNIT	EST. UNIT COST	LUMP SUM
Site Excavation	Cubic Yard	\$30.00	\$15,000.00
Rough Grading	Square Yard	\$2.50	\$18,750.00
Concrete Culvert & Headwalls	Each	\$35,000.00	\$140,000.00
Concrete Retaining Wall	Linear Feet	\$250.00	\$7,500.00
Fine Grading	Square Yard	\$7.00	\$52,500.00
Trash Rack	Each	\$1,500.00	\$3,000.00
Stream Restoration Plantings	Square Yard	\$75.00	\$22,500.00
		ESTIMATED PROJECT COST	\$260,000.00



# ACHUGAO DRAFT WMP



- Existing Conditions and Pollution Sources—Complete
- Load Modeling & Restoration Potential—Complete
- Draft Implementation Strategy for Review—NOW
  - Goals and Objectives
  - Project Lists
  - Cost Estimates
  - Education and Monitoring
- Full Draft Plan for Review—Mid-August







# Roundtable

## Updates, concerns, opportunities?

- Grant: NOAA Transformational Habitat Restoration and Coastal Resilience Grants
  - <https://www.fisheries.noaa.gov/grant/transformational-habitat-restoration-and-coastal-resilience-grants>
- Grant: NOAA Coastal Habitat Restoration and Resilience Grants for Underserved Communities
  - “<https://www.fisheries.noaa.gov/grant/coastal-habitat-restoration-and-resilience-grants-underserved-communities>”
- Grant: NFWF America the Beautiful Challenge 2022
  - <https://www.nfwf.org/programs/america-beautiful-challenge/america-beautiful-challenge-2022-request-proposals>
- Training: Project Management – Identifying, Analyzing, and Managing Project Risk
  - “This class revolves around the advanced practices for identifying, communicating, managing, and controlling project risks... includes discussions, hands-on exercises, scenarios, and case studies.”
  - Aug. 8–12 @10am-1pm → Virtual
  - More info here: <https://learn.pitiviti.org/137>
- Training: Coral Disease Identification Workshop
  - Wednesday, Aug. 10 @1pm → DCRM Learning Center
- Training: LEED Green Associate
  - Wednesday, Aug. 24 @12–6pm → BECQ
  - “LEED (Leadership in Energy & Environmental Design) is a sustainability scorecard for green buildings. The LEED Green Associate is the best professional designation to show employers and clients that you have certified knowledge in the field.”
  - \$300 registration fee
  - <https://leadinggreen.com/saipan/>

# Thank you!



Zachary B. Williams | Watershed Coordinator (BECQ-DCRM-CRI)  
[zwilliams@dcrm.gov.mp](mailto:zwilliams@dcrm.gov.mp) | (670) 664-8303

