# **Guam's FY 2017-2018 Coral Reef Conservation Grant**



Bureau of Statistics and Plans

**February 15, 2017** 

(Revision 5/1/17)

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#### **COVERSHEET**

- 1. Application Coversheet
- a) Applicant Name and Contact Information:

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Contact Number: 671 472-4201/2/3 Facsimile Number: 671 477-1812

b) Applicant organization:

Bureau of Statistics and Plans

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Bureau of Statistics and Plans

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e) Application Project Title:

Guam's FY 2017-2018 Coral Reef Conservation Grant Program

f) Geographic Location: Guam

g) Federal funding requested for each year FY17: \$460,214

FY18: \$400,000

h) Matching funds provided for each year FY17: \$49,811 In Kind

FY18: \$51,454 In Kind

i) Award start date and award period October 1, 2017 to September 30, 2019

# **SUMMARY TABLE**

For FY17 and FY18, Guam is requesting \$460,214 for Year 1 and \$400,000 for Year 2 and In kind Match of \$49,811 for Year 1 and \$51,464 for Year 2 to include the full amount for dues to the All Islands Committee and the Coral Reef Fellowship Program.

	SUMM	MARY OF GUAM FY 17	7-18 CRCP API	PLICATION FO	R YEAR 1
Type of Support	Title	of Project or Position	Federal Request / Budget	Matching funds available	Desired Outcome
Program	1 of 2	Coral Reef Watershed Coordinator Salary, Fringe, Travel	\$62,851.00	\$0.00	Increase awareness of coral reef threats; enhance community stewardship in Merizo and other watershed CAP
Program	1 of 2	Coral Reef Resilience Coordinator Salary and Fringe, Supplies, Travel, Contractual	\$58,065.00	\$32,384.00	Coordinate Guam's Coral Reef Response Team to address acute threats facing Guam's coral reef ecosystems; Prepare and Submit Quarter Progress Reports
Program	1 of 2	Travel for POC and Governor to USCRTF and AIC	\$14,290.00	\$0.00	Enable POC and Governor to attend AIC and USCRTF meetings
Program	1 of 2	Support for AIC Dues <sup>1</sup>	\$24,286.00	\$0.00	AIC Dues for AIC Administrative Support
Program	1 of 2	Coral Reef Fellows Program <sup>2</sup>	\$10,714.00	\$0.00	Coral Reef Fellow
Program	1 of 2	Comprehensive Long Term Monitoring at Permanent Sites on Guam	\$200,000.00	\$0.00	Coral Reef Monitoring Data; State of the Reef Report
Project 1	1 of 2	Support for Public Environmental Education and Outreach	\$29,794.00	\$17,427.00	Produce educational materials, increase awareness of Guam's Ecosystem

	SUMN	MARY OF GUAM FY 17	7-18 CRCP API	PLICATION FO	R YEAR 1
Type of Support	Title	of Project or Position	Federal Request / Budget	Matching funds available	Desired Outcome
Program	1 of 1	Staff Management Training For Grants and Cooperative Agreements	\$5,214.00	\$0.00	Increased staff capacity to manage cooperative agreement with 2 CFR 200 requirements
Project 1	1 of 1	Bleaching Mitigation and Reef Resilience	\$55,000.00	\$0.00	Establishment of a coral nursery within the Manell-Geus Habitat Focus Area for future outplanting
		Total Funding Amount	\$460,214.00	\$49,811.00	
1,2 Funds are	held bac	k from grantor			

	SUMN	MARY OF GUAM FY 17-1	8 CRCP APPL	ICATION FO	R YEAR 2
Type of Support	Titl	e of Project or Position	Federal Request / Budget	Matching funds available	Desired Outcome
Program	2 of 2	Coral Reef Watershed Coordinator Salary, Fringe, Travel	\$59,911.00	\$0.00	Increase awareness of coral reef threats; enhance community stewardship in Merizo and other watershed CAP
Program	2 of 2	Coral Reef Resilience Coordinator Salary and Fringe, Supplies, Travel, Contractual	\$74,231.00	\$33,535.00	Coordinate Guam's Coral Reef Response Team to address acute threats facing Guam's coral reef ecosystems; Prepare and Submit Quarter Progress Reports
Program	2 of 2	Travel for POC and Governor to USCRTF and AIC	\$14,253.00	\$0.00	Enable POC and Governor to attend AIC and USCRTF meetings
Program	2 of 2	Support for AIC Dues <sup>1</sup>	\$24,286.00	\$0.00	AIC Dues for AIC Administrative Support
Program	2 of 2	Coral Reef Fellows Program <sup>2</sup>	\$10,714.00	\$0.00	Coral Reef Fellow

	SUMN	MARY OF GUAM FY 17-1	8 CRCP APPL	ICATION FO	R YEAR 2
Type of Support	Title	e of Project or Position	Federal Request / Budget	Matching funds available	Desired Outcome
Program	2 of 2	Comprehensive Long Term Monitoring at Permanent Sites on Guam	\$200,000.00	\$0.00	Coral Reef Monitoring Data; State of the Reef Report
Project 1	2 of 2	Support for Public Environmental Education and Outreach	\$16,605.00	\$17,919.00	Produce educational materials, increase awareness of Guam's Ecosystem
		Total Funding Amount	\$400,000.00	\$51,454.00	
1,2 Funds are	held bac	ek from grantor	<u>-</u>	·	

Guam's FY 2017-2018 proposal narrative contains general information, detailed task narratives clearly showing the relationship to the aforementioned aims and estimated budget tables. Also, Appendix A-Project Managers' Curricula Vitae, contains the curriculum vitae of all project managers.

#### PROPOSAL NARRATIVE

#### Introduction

Guam's coral reef resources are both economically and culturally important to the residents of Guam. They provide numerous goods and services that support Guam's culture and traditions, tourism and recreation, fisheries, and shoreline and infrastructure protection. Approximately 108 km<sup>2</sup> of shallow coral reef area is found within 3 miles of Guam, with an additional 110 km<sup>2</sup> occurring between 3 and 200 miles. As critically important Guam's coral reefs are to life on Guam, the island's reef system has been hit particularly hard by a series of coral bleaching events in recent years, caused by warming waters due to climate change. They face an array of other local stressors, sedimentation from upland soil erosion, storm water runoff and associated pollutants, marine debris, coral bleaching, coral disease, recreational misuse, climate change or severe weather condition, and more<sup>1</sup>.

Guam is at a critical and unique point with regard to its coral reef ecosystem management. Guam's reefs have endured back-to-back coral bleaching events in 2014-2016, and recent dry seasons that have seen unprecedented numbers of fires in the south, contributing to more erosion and sedimentation affecting the coral reefs.

The Bureau of Statistics and Plans and the Governor of Guam's Point of Contact for coral reef conservation activities in collaboration with our natural resource partners, continues to take the lead of promoting awareness to the importance of coral reef ecosystem to the island community and to work collaborative with public and private sectors, non-profit organizations, businesses, and educational institutes to encourage best management practices of coral reef conservation efforts. The project tasks being requested for funding will support the coral reef management and monitoring programs and conservation projects that will improve the condition of the coral reef ecosystem resources in Guam.

BSP has identified specific areas to target conservation efforts for improving water quality through management action: 1) improve relationships with stakeholder communities, 2) plan for and mitigate damage from the effects of long-term bleaching of the coral reefs, 3) build and increase capacity in our local managers for analysis and data management, and 4) support established Educational and Outreach programs. The proposed projects align with these specific areas.

# **Programmatic Activities**

With the proposed funding opportunity provided under the FY 2017-2018, the Bureau of Statistics and Plans (BSP) can continue to support critical staff: Coral Reef Watershed Coordinator, who continues to conduct outreach work and restoration projects in the Manell-Geus Priority Watershed; and support for Guam's Long Term Coral Reef Monitoring Program – staffed by the Monitoring Coordinator, Technical Support Specialist, Monitoring Assistants, and Field Personnel - which monitors the state of Guam's coral reef ecosystems in the Marine Protected Areas. Along with the continued staff support, BSP is adding a new position, the Coral Reef Resilience Coordinator. This position will address the needs and goals of Guam's natural resource agencies to support efforts to actively respond to reef threats and to incorporate reef resilience principles into coral reef management actions and strategies. The Coral Reef Resilience Coordinator will coordinate the Response Team and facilitate response activities, implement the Reef Resilience Strategy, support the US Coral Reef Task Force and the All Islands Committee, and prepare grant proposals and reports while overseeing CRCP-funded projects on Guam, and will help manage the updates of Guam's Priority documents.

<sup>&</sup>lt;sup>1</sup> Guam, Bureau of Statistics and Plans. Status of the Coral Reef Ecosystems of Guam. No.1, December 2009.

In addition, the proposed funding will support established Education and Outreach Programs such as the "Guardians of the Reef Program", watershed tours and hikes, beach cleanup, Earth Month and community educational training, clinics, and workshops in collaboration with local and federal government natural resource agencies and nongovernmental organizations. Additionally, funds will also support efforts and activities of the Guam Nature Alliance (GNA) events and its subcommittees (hanom/freshwater, tano/land and tasi/sea), and media campaigns to educate the community "to connect or learn about Guam's environment", "about how resources are culturally significant and should be respected", and "calls to action to protect resources".

Furthermore, a project to build resilience and redundancy into our marine protected areas (MPA) calls for the expansion of an existing coral nursery designed to help plan and mitigate damage sustained from past (and future) bleaching events is included in Guam's proposal.

The projects proposed have been identified in Guam's Local Action Strategies (LAS), Guam's Conservation Action Plan (CAP), Guam's Coral Reef Management Priorities and the CRCP National Goals and Objectives.

Table 1 illustrates the resources need to continue implementation of the local coral reef management program and support for key programmatic staff.

Program Title	Position Title	Funding Amount Year 1	Funding Amount Year 2
Coral Reef Watershed	<sup>1</sup> Coral Reef Watershed	2 000 2	
Coordinator	Coordinator Salary	\$42,307.00	\$43,910.00
	Coral Reef Watershed		
	Coordinator Fringe Benefits	\$14,562.00	\$15,029.00
	Travel for Professional Development \$5010; and Travel for local mileage		
	reimbursement \$972	\$5,982.00	\$0.00
Coral Reef Resilience	<sup>2</sup> Coral Reef Resilience		
Coordinator	Coordinator Salary	\$30,572.00	\$47,301.00
	Coral Reef Resilience Coordinator Fringe Benefits	\$11,141.00	\$16,019.00
	Travel for Professional Development, Supplies, Contractual	\$15,452.00	\$17,462.00
Comprehensive Long Term Monitoring at Permanent Sites on Guam	<sup>3</sup> Coral Reef Biologist - Monitoring Team Leader Salary	\$48,490.00	\$50,328.00
	Coral Reef Biologist - Monitoring Team Leader Fringe Benefits	\$18,687.00	\$19,217.00
	<sup>4</sup> Coral Reef Biologist - Technical Support Salary	\$39,965.00	\$41,479.00

Program Title	Position Title	Funding Amount	Funding Amount
	Coral Reef Biologist -		
	Technical Support Fringe		
	Benefits	\$13,760.00	\$14,197.00

Table 2 illustrates the resources needed for Administrative Support.

Pr	ogram Title	Funding Amount Year 1	Funding Amount Year 2
Task 4	Travel	\$14,290.00	\$14,253.00
Task 5	<sup>1</sup> AIC Dues	\$24,286.00	\$24,286.00
Task 6	<sup>1</sup> Coral Reef Fellows	\$10,714.00	\$10,714.00

<sup>&</sup>lt;sup>1</sup> The National Oceanic Atmospheric Administration is authorized to hold \$24,286 of the grant for Guam's All Island Committee dues for Year 1 and Year 2.

# **Proposed Projects**

#### Task 1. Coral Reef Watershed Coordinator

Guam Objective 1.3: Educate target stakeholder groups about the sedimentation issues associated with specific watershed uses and activities.

Guam Objective 2.2: Create community management programs that increase public knowledge of, support for, and participation in marine preserves and science-based management.

National LBSP Impacts Objective 1.3: Implement watershed management plans and relevant LAS within priority coral reef ecosystems and associated watersheds to improve water quality and enhance coral reef ecosystem resilience. Where needed, develop (or update) watershed management plans that incorporate coral reef protection measures.

National LBSP Impacts Objective 3.5: Increase public and political awareness and understanding of the ecological and socioeconomic impacts of land-based sources of pollution on coral reef resources to promote better stewardship and informed decisions regarding activities in watershed that may adversely impact coral reef ecosystems.

National Fishing Impacts Objective 2.4: Work with relevant agencies, offices and communities to create, implement and improve the management of MPAs that protect key coral reef ecosystem components and functions.

National Fishing Impacts Objective 3.1: Increase participation of stakeholder or citizen groups in fisheries management planning, decision-making and monitoring activities that improve conservation of coral reef ecosystems.

National Fishing Impact Objective 4.3: Develop targeted, locally relevant outreach and communication strategies to increase community understanding and support for regulations to protect key coral reef ecosystem species/functional groups and expanded use of marine protected areas.

# Introduction

A continuing need exists in the Bureau of Statistics and Plans fund a position to lead the planning and implementation of a programmatic community outreach component to support the CRCP in the implementation of the Community Action Plan for the Manell Geus Watershed; to collaborate and to partner with local partners in the implementation of the Malesso Community Based Management Plan; the development, presentation, and distribution of outreach products and messages about the threats to coral reef resources in partnership with Guam's Nature Alliance; the administering and implementation of the CRCP programmatic requirements; the development and implementation of watershed and coral reef restoration projects related to the above objectives; and to assist Guam's Coral Reef Point of Contact in coordinating, planning and implementing Guam's Coral Reef Advisory Council and Coral Reef Initiative Coordinating Committee (CRICC) in the update of Guam's Local Action Strategy and Guam's Coral Reef Management Priorities. This position is housed at the Bureau of Statistics and Plans, Socio Economic Planning Program. The funding identified is for salary, fringe benefits, and supplies for the FY 17 and FY 18. The position is filled by Anna Simeon, a biologist with a background in Environmental Science.

# Task Description and Methodology

The position continues to be filled by Anna Simeon. She is hired through a limited term appointment under the Government of Guam job classification as a Biologist as BSP is unable to hire this position as a permanent classified employee due to the funding source.

#### **Task Outcomes or Products**

The outcomes of this project will be one full time hire dedicated to supporting the priorities listed in the Reef Resilience Plan and implementation of the Conservation Action Plan in the Manell/Geus watershed. The Coral Reef Watershed Coordinator will collaborate with local agencies and organizations including: the Humatak Community Foundation (HCF), Island Girl Power, Coral Reef Ambassador Program, Department of Agriculture, and the Guam Nature Alliance led by Guam EPA to conduct outreach and education to engage the community to become stewards of our island resources. The outcome of this task is to increase BSP capacity to manage coral reef ecosystems, to fill an essential staff position, and to help implement the Reef Resilience Strategy and support Guam's Local Action Strategies.

#### Schedule

# **Project Schedule**

Year 1	Oct-	Nov-	Dec-	Jan-	Feb-	Mar-	Apr-	May-	Jun-	Jul-	Aug-	Sep-
Projects/Tasks	17	17	17	18	18	18	18	18	18	18	18	18
BSP Establish Award												
Implement												
Watershed and												
Outreach Services												
and Support												
Year 2	Oct-	Nov-	Dec-	Jan-	Feb-	Mar-	Apr-	May-	Jun-	Jul-	Aug-	Sep-
Projects/Tasks	18	18	18	19	19	19	19	19	19	19	19	19
Implement												
Watershed and												
Outreach Services												
and Support												

# **Project Management and Personnel**

The project manager for this project is Ms. Lola E. Leon Guerrero. She is the Chief Planner with the Bureau of Statistics and Plans Socio Economic Planning Program. Ms. Leon Guerrero will oversee the implementation of this project. BSP hired Anna Simeon as the Coral Reef Watershed Coordinator in January 2015 through the government of Guam recruitment process.

# **Project Manager or Principal Investigator (PI)**

Lola E. Leon Guerrero, Chief Planner

Bureau of Statistics and Plans, Socio Economic Planning Program

Phone: 472-4201/2/3 Facsimile: 477-1812

Email Address: lolalg@bsp.guam.gov

**Task Budget Summary Table** 

Coral Reef Watershed Coordinator Budget Summary-Year 1										
Category	Federal funds	Matching Funds	Total							
Personnel	\$42,307.00	\$0.00	\$42,307.00							
(111) Coral Reef Water hours x 100%	ershed Coordinator (Bio	logist II Grade M, Step 2) @	\$20.34 x 2080							
Fringe	\$14,562.00	\$0.00	\$14,562.00							
	· ·		,							
(113) Coral Reef Watershed Coordinator (Biologist II) Fringe Benefits \$42,307 x 27.71% Retirement (\$11723), Medicare (\$613) medical (\$1321), dental (\$224), Life (\$186), DDI (\$495) x 100% = \$14562										
Travel	\$5,010.00	0	\$5,010.00							
(220) Professional dev	elopment activity (one	per grant cycle) = \$5,010 [Re	elevant conference.							
		Atrip airfare (\$2500), up to 6 of or up to 6 days @ \$35 per da								
Travel (Local Mileage Reimbursement	\$972.00	\$0.00	\$972.00							
		ll and watershed (roundtrip tileage) = \$27 x 3 trips per mo	*							
	·	inator Budget Summary-Y	,							
Category	Federal funds	Matching Funds	Total							
Personnel	\$43,910.00	\$0.00	\$43,910.00							
	· ·	ologist II Grade M Step 3) @	· ·							
Fringe	\$15,029.00	\$0.00	\$15,029.00							
(113) Coral Reef Wate	ershed Coordinator (Bio Medicare (\$637), medi	ologist II) Fringe Benefits \$4 cal (\$1321), dental (\$224), L	3,910 x 27.71%							
Travel (Local Mileage Reimbursement)	\$972.00	\$0.00	\$972.00							
(220) Local Mileage Reimbursement for use of personnel vehicle to Manell Geus Watershed in Merizo to address and access bamboo removal and watershed (roundtrip from Adelup to Merizo 50 miles x .54 per mile (federal gsa mileage) = \$27 x 3 trips per month x 12 months = \$972)										
TOTALS	\$59,911	.00 \$0.00	\$59,911.00							

#### Task 2. Coral Reef Resilience Coordinator

This project is not listed in the current Local Action Strategies (LAS) but is necessary to assist with building capacity to address efforts related to Guam's LAS and the Guam Reef Resilience Strategy.

**Guam LAS Objective 4.1:** Establish and prepare response teams to address bleaching events, disease and predator outbreaks, and other acute events (e.g. ship groundings, chemical spills).

**Guam LAS Objective 4.4:** Increase understanding of the causes of coral bleaching and disease-associated mortality on Guam and investigate approaches to stimulate recovery and rehabilitation.

**Guam LAS Objective 4.5:** Quantify the extent of nuisance and invasive species affecting Guam's reefs and investigate and test management approaches.

**National Climate Change Impacts Objective C1.1:** Provide training opportunities to coral reef managers to increase understanding of the impacts of climate change, the predicted range and uncertainty of changes that will occur, and management strategies that address the impacts of climate change.

National Climate Change Impacts Objective C2.1: Characterize physical and chemical changes in coral reef environments by enhancing question-based monitoring to fill gaps in our current observations. This both establishes a baseline to assess climate change impacts on coral reef ecosystems and reveals changes through time.

**National Climate Change Impacts Objective C2.2:** Characterize the responses of coral reef ecosystems and their related components to climate change and ocean acidification to separate impacts from climate change and ocean acidification from impacts of other environmental threats and to test the effectiveness of management actions.

**National Climate Change Impacts Objective C2.4:** Promote conservation of coral reef ecosystems through identification of areas that are potentially vulnerable to climate change and vulnerable areas where actions are likely to increase resilience. Encourage and promote management actions necessary to avoid or minimize impacts and spread the risk due to climate change and ocean acidification.

**National Climate Change Impacts Objective C4.3:** Support implementation and monitoring of promising intervention measures to reduce the impact of climate change and ocean acidification on coral reef ecosystems and evaluate the success of intervention methods (e.g. shading, pumping in cool water, local reduction of acidification, etc.).

#### Introduction

Guam's natural resource agencies recognize the need to continue supporting efforts to actively respond to reef threats and to incorporate reef resilience principles into coral reef management actions and strategies. Guam has formalized the Coral Reef Response Team to address acute reef impacts such as coral bleaching, coral disease, vessel groundings, and outbreaks of invasive and nuisance species, like the crown of thorns sea star (*Acanthaster planci*). The Response Team requires ongoing coordination and training opportunities to build capacity of team members, which include representatives from the Bureau of Statistics and Plans (BSP), the Guam Coastal Management Program (GCMP), the Guam Environmental Protection Agency (GEPA), the Guam Department of Agriculture Division of Aquatic and Wildlife Resources (DAWR), the University of Guam Marine Laboratory (UOGML), the National Park Service (NPS), and NOAA. Long term goals of the Response Team are:

- 1. Move beyond documenting reef ecosystem health after an impact to mitigating damages, managing resources, and restoring coral reef ecosystems.
- 2. Facilitate economic studies and assessment of damages to hold responsible parties accountable for reef impacts, which would be implemented through local legislation.
- 3. Execute an archipelagic or regional training, drill, or exercise to increase capacity to cooperatively respond to reef impacts in the Marianas and/or Micronesia.

4. Increase public awareness of the threats facing coral reefs and engage communities in conservation activities.

This team gathered information on coral bleaching during the 2013, 2014, and 2016 events, with recovery assessments conducted in 2015. The data from these assessments and other sources have helped shape the Guam Reef Resilience Strategy. Once finalized and approved by participating agencies (by November 2017), the Reef Resilience Strategy will be implemented to integrate reef resilience concepts into initiatives of the Government of Guam and reframe coral reef management priorities on Guam.

Furthermore, the management of Guam's CRCP grant projects requires proper project reporting and implementation, fulfillment of information requests, and production of documents including grant applications. The Guam Coral Reef Initiative (CRI) requires further coordination to support CRCP-funded projects, project managers, and information requests from natural resource agencies on Guam.

The Coral Reef Resilience Coordinator will address these needs and goals by coordinating the Response Team and facilitating response activities, supporting Guam's US Coral Reef Point of Contact, the US Coral Reef Task Force, and the All Islands Committee, and preparing grant proposals and reports while overseeing CRCP-funded projects on Guam.

The Coral Reef Resilience Coordinator will be employed at the Bureau of Statistics and Plans as a Biologist II (Grade M, Step 1-2). The Bureau of Statistics and Plans (BSP) is a staff agency to the Office of the Governor, housed within the Ricardo J. Bordallo Office of the Governor Complex. Public Law 20-147 mandates that it is BSP's responsibility to undertake any planning activity that is not being carried out or that is not the function of another department. BSP has the legislative flexibility to appraise, coordinate, prepare, and assist in the development of a wide range of plans, policies, and studies that further economic, social, land use, environmental, and infrastructure goals, priorities, and planning activities. This flexibility is reflected in BSP's mission statement: to ensure Guam's resources are effectively used for the benefit of present and future generations by ensuring consistency among various plans, policies and programs.

The position will be hired through the normal Government of Guam (GovGuam) hiring practices through a limited term appointment under the GovGuam job classification as a Biologist II; BSP is unable to hire this position as a permanent classified employee due to the funding source.

#### Task Description and Methodology

The outcome of this project will be one full time hire dedicated to coordination of activities related to fulfilling the objectives and priorities of Guam's LAS and the Reef Resilience Strategy, which are imperative to long-term coral reef conservation and protection. The Coral Reef Resilience Coordinator will collaborate with GCMP, GEPA, DAWR, UOGML, NPS, and NOAA to respond to acute threats facing Guam's coral reef ecosystems. The Coordinator will also manage grants funded by CRCP and administered by BSP to ensure timely and professional project implementation and reporting and support Guam's participation in the US Coral Reef Taskforce (CRTF) and the All Islands Committee (AIC), while representing Guam in various working groups. Additionally, the Coordinator will assist in supervision of the NOAA Coral Fellow at BSP.

The Coordinator will provide support for ongoing Guam Coral Reef Initiative (CRI) activities and projects, and will work closely with Guam CRI managers and staff to implement program goals.

The primary activities of the Coordinator are:

- Coordinate the Guam Coral Reef Response Team, including coordination of quarterly meetings and response activities, and facilitation of at least one training exercise per year to build the capacity of the Response Team to respond to acute impacts to Guam's reefs.
- In support of the CRCP Cooperative Agreement and the Guam Coral Reef Initiative, in collaboration with the Coral Reef Watershed Coordinator, prepare quarterly grant progress reports and financial reports, the CRCP FY19-20 grant proposal, and other progress reports and informational documents as needed (including providing grant-related assistance and technical support to project managers and GovGuam agencies).
- Seek project proposals from local entities in advance of the CRCP FY19-20 grant application cycle and coordinate the review and recommendation of selected projects.
- Participate in CRTF Working Group and Steering Committee meetings and meetings of the AIC, while providing feedback on CRTF and AIC proposals, plans, and documents as needed.
- Assist in supervision of the 2018-2020 Coral Fellow at BSP.
- Provide technical assistance and support for field work (snorkeling) and data analysis for questiondriven projects that are relevant to establishing baselines, understanding impacts, improving management, and increasing resilience of Guam's coral reef resources.

#### **Outcomes and Products**

- Quarterly meetings of the response team and two annual training exercises
  - o Benefit: Increased capacity to respond to acute threats to Guam's coral reefs
  - o Evaluation: Meeting attendance and feedback from training participants
- Submission of the CRCP FY19-20 grant proposal
  - o Benefit: Continued support for Guam's Coral Reef Initiative projects
  - o Evaluation: Successful submission of proposal by deadline and successful funding of submitted projects

# **Project Schedule**

Year 1 Projects/Tasks	Oct-	Nov-	Dec-	Jan-	Feb-	Mar-	Apr-	May-	Jun-	Jul-	Aug-	Sep-
	17	17	17	18	18	18	18	18	18	18	18	18
BSP establish award												
BSP recruit position												
Response Team												
quarterly meetings												
Response Team												
training exercise –												
planning and execution												
Prepare quarterly												
reports (CRCP progress												
reports and financial												
reports, AIC												
jurisdictional updates)												
Seek project proposals												
and prepare CRCP												
FY19-20 project list												
Prepare CRCP FY19-												
20 preproposal												

Year 2 Projects/Tasks	Oct-	Nov-	Dec-	Jan-	Feb-	Mar-	Apr-	May-	Jun-	Jul-	Aug-	Sep-
	18	18	18	19	19	19	19	19	19	19	19	19
Response Team												
quarterly meetings												
Response Team												
training exercise –												
planning and execution												
Prepare quarterly												
reports (CRCP progress												
reports and financial												
reports, AIC												
jurisdictional updates)												
Prepare CRCP FY19-												
20 preproposal												
Prepare CRCP FY19-												
20 grant proposal												

# **Project Management and Personnel**

The project manager for this project is Ms. Lola E. Leon Guerrero, Chief Planner with BSP. BSP anticipates to recruit Ms. Whitney Hoot, the current Coral Fellow, as the Reef Resilience Coordinator through the GovGuam recruitment process, when her fellowship is completed in January 2018.

Ms. Lola E. Leon Guerrero, Chief Planner Bureau of Statistics and Plans (BSP), Government of Guam PO Box 2950, Hagatna, Guam 96932

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Email: lolalg@bsp.guam.gov

The Biologist II designation allows this position to participate in SCUBA diving activities, however BSP does not currently have an active dive safety board. The Reef Resilience Coordinator will be permitted to dive only if appropriate safety measures, such as a dive safety board, are instituted. Fieldwork and response activities and support will be limited to snorkeling until such time.

# **Task Budget Summary Table**

Reef Resilience Coordinator Budget Summary – Year 1								
Category	Federal funds	deral funds Matching funds Total						
Personnel	\$30,572 \$24,564							
	(111) Salary for Reef Resilience Coordinator (Grade M, Step 1) for January 2018 through September 2018 (9 months) = \$30,572 (\$40,762 per annum x 75%)							
35% or 28 hours of the Chief Planner (Lola E. Leon Guerrero) will be directly involved in the administrative oversight of this cooperative agreement (Establishment, AAR review and action, MOU, reprogramming) $$70,183 \times 35\% = $24,564$								
Fringe	\$11,141	\$7,820	\$18,961					

# Reef Resilience Coordinator Budget Summary - Year 1

(113) Fringe benefits for Reef Resilience Coordinator (Grade M, Step 1) for January 2018 through September 2018 (9 months) = \$11,141 [Retirement @ 27.71% (\$8,472), DDI @ \$19.01\*26PP (\$495), Medical (\$1,321), Dental (\$224), Life (\$186), Medicare @ 1.45% (\$443)]

35% or 28 hours of the Chief Planner (Lola E. Leon Guerrero) will be directly involved in the administrative oversight of this cooperative agreement (Establishment, AAR review and action, MOU, reprogramming)  $$22,343 \times 35\% = $7,820$ 

Supplies \$3,000 \$0 \$3,000

(240) Field supplies = \$1,000 (1 dive/snorkel float and flag, 1 GPS and 3 dry bags, 3 50m transect tapes, 3 1m quadrats, 5 light and temperature loggers, 1 water quality probe) for documenting acute impacts to reefs and reef flats (e.g. vessel groundings, coral bleaching, etc.)

(250) Field supplies: 1 digital point and shoot camera with underwater housing (\$1500) ) for documenting acute impacts to reefs and reef flats (e.g. vessel groundings, coral bleaching, etc.)

(240) Miscellaneous grant administrative office supplies = \$500 (To include copier paper, file folders, staples, paper clips, USB flash drive, post it notes, etc.)

Contractual \$13,352 \$0 \$13,352

(230) Outreach materials = \$1000 (Informational brochures, posters, booklets, etc. related to the Guam Coral Reef Response Team, the Guam Reef Resilience Strategy, and community outreach programs)

(230) the Guam Coral Reef Response Team (one per annum) \$8352 = [ travel for up to two trainers @ \$2500 per person (\$5000), per diem for two trainers for up to 6 days @ \$246 (\$159 lodging and \$70 meals) per day for Guam ( $\$1476 \times 2 = \$2952$ ) and ground transportation (car rental) \$400]

(230) Coral Reef Response training venue for up to 3 days @ \$1,200 per day (\$3,600);

(230) Coral Reef Response printing and field supplies (\$400)]

TOTALS \$58,065 \$32,384 \$90,449

Reef Resilience Coordinator Budget Summary – Year 2									
Category	Federal funds	Matching funds	Total						
Personnel	\$42,307	\$25,495	\$67,802						

Salary for Reef Resilience Coordinator (Grade M, Step 2) for October 2018 through September 2019 (12 months) = \$42,307

35% or 28 hours of the Chief Planner (Lola E. Leon Guerrero) will be directly involved in the administrative oversight of this cooperative agreement (Establishment, AAR review and action, MOU, reprogramming)  $$72,842 \times 35\% = $25,495$ 

Fringe \$14,562 \$8,040 \$22,602

Fringe benefits for Reef Resilience Coordinator (Grade M, Step 2) for October 2018 through September 2019 (12 months) = \$14,562 [Retirement @ 27.71% (\$11,723), DDI @ \$19.01\*26PP (\$495), Medical (\$1,321), Dental (\$224), Life (\$186), Medicare @ 1.45% (\$613)]

35% or 28 hours of the Chief Planner (Lola E. Leon Guerrero) will be directly involved in the administrative oversight of this cooperative agreement (Establishment, AAR review and action, MOU, reprogramming)  $$22,972 \times 35\% = $8,040$ 

Contractual \$12,352 \$0 \$12,352

(230) the Guam Coral Reef Response Team (one per annum) = [ travel for up to two trainers @ \$2500 per person (\$5000), per diem for two trainers for up to 6 days @ \$246 (\$159 lodging and \$70 meals) per day for Guam (\$1476 x 2 = \$2952) and ground transportation (car rental) \$400]

Reef Resilience Coordinator Budget Summary – Year 2							
(230) Coral Reef Response training venue for up to 3 days @ \$1,200 per day (\$3,600);							
(230) Coral Reef Response printing and field supplies (\$400)]							
Travel	\$5,010	\$0	\$5,010				
Professional development activity (one per grant cycle) = \$5010 [Relevant conference, training, workshop, or course, to include roundtrip airfare (\$2500), up to 6 days per diem @ \$250 per day (\$1500), transportation for up to 6 days@\$35 (\$210), and registration (\$800)]							
TOTALS	\$74,231	\$33,535	\$107,766				

Task 3. Travel

This is an administrative task

#### Introduction

Travel funds are needed for Guam participation in the AIC meeting and the U.S. Coral Reef Task Force meeting. Members of the AIC meet in-person twice a year, coinciding with U.S. Coral Reef Task Force (USCRTF) meetings. Each AIC Meeting typically has two sessions; an Executive Session (for AIC members only) and an Open Session (open to invited guests). The AIC typically uses the time to discuss internal issues, introduce new members, discuss priority issue areas, and come to consensus on any outstanding AIC decisions. Time is also taken during the meeting for POCs to share information and talk about any concerns or issues amongst themselves (without Advisors or Secretariat director).

Each of the AIC's member jurisdictions are a member of the U.S. Coral Reef Task Force (USCRTF). The AIC Affiliate members are non-voting members of the USCRTF.

AIC members attend the biannual meetings of the USCRTF each year, typically with their principals or Task Force member (i.e., Governor or member representative). At these meetings, the AIC Chair presents an update report and presentation to Task Force members of priorities and accomplishments since the previous Task Force meeting.

#### **Task Outcomes or Products**

Funds for the Governor, the designated Coral Reef Point of Contact, and or the Governor designee (should the governor not be able to attend) the U.S. Coral Reef Task Force meeting and AIC meetings.

### Schedule

# **Project Schedule**

Year 1	Oct-	Nov-	Dec-	Jan-	Feb-	Mar-	Apr-	May-	Jun-	Jul-	Aug-	Sep-
Projects/Tasks	17	17	17	18	18	18	18	18	18	18	18	18
US Coral Reef Task												
Force Meeting in												
Washington D.C.												
AIC Meeting												
Year 2	Oct-	Nov-	Dec-	Jan-	Feb-	Mar-	Apr-	May-	Jun-	Jul-	Aug-	Sep-
Projects/Tasks	18	18	18	19	19	19	19	19	19	19	19	19
US Coral Reef Task												
Force Meeting												
AIC Meeting												

# **Project Manager or Principal Investigator (PI)**

Lola E. Leon Guerrero, Chief Planner

Bureau of Statistics and Plans

Phone: 472-4201/2/3 Facsimile: 477-1812

Email Address: lolalg@bsp.guam.gov

# **Task Budget Summary Table**

Travel Budget Summary-Year 1								
Category	Federal funds	Matching Funds	Total					
Travel	\$14,290.00	\$0.00	\$14,290.00					
TOTALS	\$14,290.00	\$0.00	\$14,290.00					
	Travel Budget St	ummary-Year 2						
Category	Federal funds	Matching Funds	Total					
Travel	\$14,253.00	\$0.00	\$14,253.00					
TOTALS	\$14,253.00	\$0.00	\$14,253.00					
***********								

#### USCRTF and AIC Meeting

Travel funds for the Coral Reef Point of Contact, and the Governor and or the Director of the Agency that Administer the CRCP to attend the All Island Committee Meeting and US Coral Reef Task Force Meetings in Washington DC and the local jurisdiction.

# Washington D.C. Meeting

Airfare  $$2900 \times 1 = $2900 \text{ to Washington, D.C. for POC}$ 

Per Diem \$250 x 3 days (inclusive of 1 travel day) =  $750 \times 130\% = 975$  for Governor

Per Diem \$250 x 4 days (inclusive of 1 travel day) =  $1000 \times 130\% = 1300 = 1000 \times 130\% = 1300 = 1000 \times 130\% = 1300 = 1000 \times 130\% = 1000 \times 1000 \times 100\% = 1000 \times 1000 \times 1000 = 1000 \times 1000 \times 1000 = 1000 \times 1000 \times 1000 = 1000 \times 100$ 

Ground Transportation for Governor (Car Rental) \$395; and ground transportation for POC (taxis) \$100

#### *Jurisdiction Meeting*

Airfare  $$2600 \times 2 = $5200$  to Jurisdiction for Governor and POC

Per Diem  $$250 \times 3$  days (inclusive of 1 travel day) =  $$750 \times 130\% = $975$  for Governor

Per Diem \$250 x 6 days (inclusive of 1 travel day) =  $1500 \times 130\% = 1950 = 1950$  for POC

Ground Transportation for Governor (Car Rental) \$395; and ground transportation for POC (taxis) \$63

Follow government of Guam Travel Policy

#### Task 4. All-island Committee (AIC) Dues

The AIC Secretariat is an office which serves to lead the coordination, development, communication and implementation of priorities established by the AIC. It was established in 2002 to provide policy support

and coordination for the Committee's participation in the USCRTF. The AIC Secretariat is made up of a full-time Executive director and three Advisors (voluntary). The Secretariat helps the AIC coordinate coral reef conservation initiatives with federal agencies, between jurisdictions, and with other non-federal partners. The AIC Secretariat is based in Honolulu, HI and funded by the AIC jurisdictions and the National Oceanic and Atmospheric Administration (NOAA) Coral Reef Conservation Program.

The Executive director of the Secretariat provides administrative, logistical, and policy support for the AIC. Three AIC Advisors provide guidance and expertise, in coral reef science, resource management, and policy, to the AIC members, affiliates, and Secretariat executive director. All three Advisors are located in Honolulu, HI.

**Task Budget Summary Table** 

AIC Dues Budget Summary-Year 1							
Category	Federal funds	Matching Funds	Total				
Contractual	\$24,286.00	\$0.00	\$24,286.00				
TOTALS	\$24,286.00	\$0.00	\$24,286.00				

AIC Dues Budget Summary-Year 2							
Category	Federal funds	Matching Funds	Total				
Contractual	\$24,286.00	\$0.00	\$24,286.00				
TOTALS	\$24,286.00	\$0.00	\$24,286.00				

The National Oceanic Atmospheric Administration is authorized to hold \$24,286 of the grant for Guam's All Island Committee dues for Year 1 and Year 2.

# Task 5. Coral Reef Fellowship Program

The National Oceanic Atmospheric Administration is authorized to hold \$10,714 of the grant for the Coral Reef Fellows for Year 1 and Year 2.

The NOAA Coral Reef Management Fellowship Program provides the state and territorial coral reef management agencies with highly qualified candidates whose education and work experience meet each island's specific needs, while providing the individual fellows with professional experience in coastal and coral reef resources management.

Each jurisdiction develops a separate Statement of Work which contains project descriptions, goals and objectives, minimum and desired qualifications, and salary, among other information. The Statements of Work uniquely reflect each jurisdiction's particular needs, complementing other ongoing local projects and management activities. Successful candidates will meet these needs.

**Task Budget Summary Table** 

Coral Reef Fellows Budget Summary-Year 1								
Category	Federal funds	Matching	Total					
		Funds						
Contractual	\$10,714.00	\$0.00	\$10,714.00					
TOTALS	\$10,714.00	\$0.00	\$10,714.00					

Coral Reef Fellows Budget Summary-Year 2								
Category	Federal funds	Matching	Total					
		Funds						
Contractual	\$10,714.00	\$0.00	\$10,714.00					
TOTALS	\$10,714.00	\$0.00	\$10,714.00					

The National Oceanic Atmospheric Administration is authorized to hold \$10,714 of the grant for the Coral Reef Fellows for Year 1 and Year 2.

# Task 6. Comprehensive Long-Term Monitoring at Permanent Sites in Guam

Project is supported in jurisdictional and CRCP Priorities

Guam Objective 3.2: Develop and implement comprehensive monitoring of water quality and coral reef ecosystem parameters within watersheds targeted for watershed restoration, with a focus on evaluating the effectiveness of watershed restoration efforts implemented as compensatory mitigation for impacts to coral reef resources.

### **Project Summary:**

This proposal is for the continued funding of Guam's comprehensive long-term coral reef monitoring program. This on-going project involves the long-term monitoring of a suite of coral reef ecosystem health parameters at high priority sites around Guam, as well as support for rapid response and other closely-related monitoring and assessment activities. Data collection began in 2009 and since then data has been collected at seven monitoring sites. The program's comprehensive approach to ecological monitoring, combined with the high density of samples within a given site, provide unique data critical to understanding changes in condition at these high priority sites and for the development of effective management strategies specific to these areas. Members of the monitoring team have also made major contributions to the mapping, assessment and monitoring of Guam's staghorn communities; an island-wide reef resilience assessment in 2016; island-wide bleaching response surveys in 2013 and 2015; and a variety of monitoring, assessment, outreach, and management-related activities. The current proposal also includes continued support for the reef flat monitoring program carried out by Dr. Laurie Raymundo, an effort which has tracked changes in the health status of Guam's reef flat coral communities since 2005.

# **Project Description**

# **Project Background and Justification**

# **Comprehensive Long-term Coral Reef Monitoring Program**

While Guam's reefs have been the subject of numerous studies, until the establishment of this program there has not been a continuous coral reef monitoring program that comprehensively addresses benthic habitat, water quality, and associated biological communities at high priority reef areas. This lack of baseline information has limited managers' ability to evaluate natural and anthropogenic impacts to Guam's reefs and to gauge the effectiveness of management activities at the scale of individual sites. In order to address this major gap, the Government of Guam natural resource agencies, with the assistance of the University of Guam Marine Laboratory and the National Oceanic and Atmospheric Administration's Pacific Islands Regional Office (NOAA PIRO), developed a long term monitoring strategy aimed at addressing the management needs of local resource agencies and the objectives set by the National Coral Reef Ecosystem Monitoring Program (NCREMP). A Monitoring Program Coordinator was hired in

January 2007 to further develop and implement the monitoring strategy. While there have been obstacles in the procurement of equipment, supplies, and a private boat charter, and despite a period of major transition of the program from the Bureau of Statistics and Plans to the University of Guam Marine Lab, progress continues to be made in addressing these obstacles, and a considerable amount of field work has been conducted since funding first became available. A large amount of baseline data for a number of key ecosystem health parameters is now available for seven high priority reef areas that are currently the focus of a number of management actions aimed at improving reef health. Subsequent data collection at these reef areas, including the incorporation of water quality monitoring, will provide critical information to managers about the effectiveness of management efforts, and will alert managers to emerging threats that may not otherwise be detected.

Data collection began in June 2009, with initial surveys targeting the southwestern end of the Tumon Bay Marine Preserve. In 2010, a more extensive data collection effort was carried out along a portion of the Tumon Bay outer reef slope and an equivalent area along the outer reef slope in East Agana Bay; benthic cover, coral size/condition, reef fish community, and macroinvertebrate community surveys were conducted at 20 sampling stations within each site. In 2011, benthic cover, coral size/condition, reef fish, and macroinvertebrate surveys were conducted at 23 sampling stations at Western Shoals, Apra Harbor, and in 2012 baseline benthic cover, coral size/condition, fish, and macroinvertebrate surveys were carried out at 20 sampling stations in Piti Bay and benthic cover, coral size/condition, and macroinvertebrate surveys were carried out at 21 sampling stations in Tumon Bay and 10 stations in East Agana Bay. In 2014 benthic cover, coral size/condition, and macroinvertebrate surveys were carried out at all 12 permanent sampling stations in Tumon Bay and at all 10 permanent stations in East Agana Bay. Benthic cover, coral size/condition, fish, and macroinvertebrate surveys were also completed at 10 permanent and 2 non-permanent sampling station in Piti Bay in 2014. A new site was established in Fouha Bay in 2015, with all surveys carried out at a total of 13 permanent sampling stations in 2015. The team returned to the Tumon and East Agana sites in 2015, carrying out all surveys at 12 permanent and 10 non-permanent stations in the Tumon site and 10 permanent stations in East Agana Bay. Although the multiparameter datasondes were not deployed in 2015 as originally intended, the Monitoring Program Coordinator did facilitate a nitrogen isotope study of the nearshore areas of the Achang Reef Flat Marine Preserve and a portion of the Cocos Lagoon. The goal of the study, which was carried out by University of Hong Kong researchers, is to identify major inputs of nitrogen pollution and, along with the biological data collected by the monitoring program, inform the development of effective watershed restoration strategies.

In 2013 the Monitoring Program Coordinator contributed a significant amount of time to the organization and implementation of a coral bleaching response effort. Between August and October of 2013 the coral reefs of Guam and other Southern Mariana Islands experienced a significant bleaching event associated with anomalously high sea surface temperatures and an extended period of calm weather. A University of Guam Marine Lab-led effort to document the event's scale and severity generated a significant amount of quantitative coral and benthic substrate composition data, along with semi-quantitative coral community data, for 48 shallow (3-5 m) reef front sites selected randomly from around the island. The Monitoring Program Coordinator presented the results of a preliminary analysis of data collected during this effort at the 2014 Asia-Pacific Coral Reef Symposium (APCRS) in Taiwan, and presented the findings of further analysis at the 2016 International Coral Reef Symposium in Honolulu, Hawai'i. A UOG Marine Lab graduate student also recently completed a study of the pattern in bleaching prevalence around the island and of the potential drivers of differences in bleaching prevalence. Follow-up surveys were carried out with the assistance of the Monitoring Program Coordinator and other members of the monitoring team in 2015 at 16 of the original 48 bleaching response sites in order to assess the full impact of the 2013 event, as well as assess additional mortality that may have resulted from another bleaching event in 2014. As bleaching was predicted for 2016 and then observed in situ as early as July, the Monitoring Program Coordinator and the Technical Support Specialist participated in bleaching response planning, including participating in meetings and assisting the current NOAA Coral Fellow with the further development of the Guam Coral Bleaching Response Plan originally developed by the Monitoring Program Coordinator and Val Brown, with NOAA PIRO. Since July the Technical Support Specialist has carried out numerous qualitative and quantitative bleaching response surveys at various reef flat sites around the island, and the Monitoring Program Coordinator has documented bleaching observed along the seaward slope during surveys for an island-wide reef resilience assessment. The Monitoring Program Coordinator also is serving as Co-PI with Dr. Jeffrey Maynard on a NOAA S-K grant-funded project aimed at assessing the resilience of reef areas around island and communicating the results to key stakeholders. Other members of the monitoring team have provided support in carrying out the reef resilience assessment, which is still on-going. Upon completion of the island-wide assessment the team will resume the normal long-term monitoring work with surveys at the Achang and Cocos-East sites.

The work of the monitoring team extends beyond monitoring at the permanent sites, reef resilience assessments, coral bleaching assessments and other rapid response activities, and has included participating in a workshop and in discussions regarding the ESA-listed coral species, the mapping of all known staghorn thickets around the island, contributing to an assessment of the bleaching-associated mortality of staghorn corals island-wide, assisting with SECORE (SExual COral REproduction) workshops and other SECORE activities on Guam, assisting with a study of the genetic connectivity of Guam's staghorn populations and the importance of these coral communities as fish habitat, carrying out all field work and contributing to the final report of a 2015 Moving Window Analysis of benthic communities in Fouha Bay, and contributing to the development of measures of success for marine resources under the Micronesia Challenge. The Monitoring Program Coordinator and other team members have also assisted with a study of sediment impacts in Fouha Bay conducted by a University of Hawai'i Ph.D. candidate, participated in a major marine debris cleanup effort at Ga'an Pt. in 2012, contributed to a Coral Health Impacts workshop led by Dr. Laurie Raymundo, contributed to a collaborative NSF RAPID-funded study of bleaching susceptibility and resilience in 2014, assisted with Guam Community Coral Reef Monitoring Program training activities, carried out surveys in support of a RARE Pride project in Tepungan (Piti) Bay in 2012 and 2014, and assisted with the Reef Flat Monitoring Program when necessary.

Monitoring team members have also carried out numerous outreach activities, such as writing articles for the Bureau of Statistics and Plans' Man, Land, and Sea newsletter and the Governor's PROA newsletter; contributing to the Into the Islands video series; posting blogs at the Micronesia Challenge website; developing and distributing informational brochures; developing and updating a monitoring program website; presenting for the NPS and NOAA PIRO-supported Science Sunday lecture series and the UOG Marine Lab's POETS lecture series; presenting at the 2012 Coral Reef Workshop, which was aimed at providing local high school teachers with information and skills related to coral reef science and management; providing lectures for the 2013 Indigenous Fellows Institute; and giving talks to students ranging from primary school to graduate students. In addition to the APCRS and ICRS presentations mentioned above, the Monitoring Program Coordinator has also presented on the mapping of Guam's staghorn corals at the 2013 Guam Coral Reef Symposium, on a comparison of the status of the reef front and lower slope reef communities at the 2016 Conference on Island Sustainability, and on the status of the coral reefs of Guam at the 36<sup>th</sup> U.S. Coral Reef Task Force Meeting and a recent recreational users workshop. The Monitoring Technical Support biologist has also given several scientific and general outreach presentations, including a presentation on the program's adaptive approach to monitoring at the 2015 Conference on Island Sustainability and a poster on the same topic at the 2016 ICRS, a presentation on monitoring methods to a Sea Grant-sponsored marine survey methods course, a presentation with general information about the monitoring program to participants of the 2013 Indigenous Fellows Institute, and a poster presentation with general information about the monitoring program at the 36<sup>th</sup> U.S. Coral Reef Task Force meeting.

### **Reef Flat Monitoring Program**

As described in previous proposals UOGML's reef flat monitoring program began in 2005 as part of coral disease assessment and monitoring work funded through a NOAA Coral Reef Monitoring Grant. Coral health monitoring continued at a subset of the reef sites initially assessed. Two of the sites selected for continued monitoring, Tumon Bay and Luminao Reef, were included in a reef flat monitoring project funded by a NOAA Global Coral Reef Monitoring Program grant that investigated the impacts of the extension and repair of two sewage outfalls. The Reef Flat Monitoring Program currently involves quarterly data collection at seven reef flat sites that extend along the western coast of Guam from Haputo Bay in the north to Luminao Reef in central Guam. The program has provided important, detailed information about trends in coral community health, and places particular attention on coral diseases, predators, bleaching and other coral health concerns and the relationship with water temperature and nutrients. The data generated through the reef flat monitoring program provides a strong complement to the data collected at the outer reef slope sites targeted with the long-term monitoring program, particularly at locations such as Tumon Bay and Piti Bay, where the need for regular monitoring data for both the reef flat and outer reef slope communities is concurrently addressed through these two monitoring programs. The reef flat monitoring program provides information to managers for a critical, dynamic, yet vulnerable reef zone, and is an essential component of a comprehensive coral reef monitoring strategy.

# **Project Description**

The updated long-term coral reef monitoring plan for Guam is currently being implemented, with limited data collection occurring in 2009 and more extensive data collection carried out since 2010. The fundamental sampling design and survey protocols have been adopted and implemented, but they remain subject to change as better methods and equipment become available.

The primary goals of the updated Guam Coral Reef Monitoring Plan are to:

- Determine the status and trends in selected coral reef ecosystem indicators to better inform the resource managers' decision making process and increase the effectiveness of natural resource management on Guam
- Provide managers with early notice of abnormal conditions of selected resources to encourage effective mitigation measures and reduce the costs of management
- Provide data to better understand the dynamic nature and condition of the island's coastal ecosystems
- Allow natural resource agencies to meet certain legal and Congressional mandates related to coastal resource protection.
- Measure progress towards performance goals

A list of specific questions raised by managers that are being addressed by the long-term monitoring program to the fullest extent possible can be viewed in previous proposals.

#### Primary Objectives

The monitoring program collects data about a number of important parameters related to ecosystem health. These parameters are grouped into three categories: water quality, benthic habitat, and associated biological communities. The parameters identified for Guam are provided below, with parameters currently being monitored in bold:

### **Water Quality:**

#### tiit<u>y</u> t

# • Temperature

# Turbidity

Dissolved Oxygen

### **Benthic Habitat**

# • Benthic % Cover

#### • Coral Colony Size

• Coral Colony Density

# **Assoc. Biological Communities**

- Reef Fish Abundance and Biomass
- Reef Fish Diversity

- pH
- Conductivity
- Chlorophyll
- Nutrients (P, N)
- Bacteria

- Coral Condition
- Rugosity
- Macroalgae diversity
- Coral Colony Growth Rates
- Macroalgae biomass
- Protected Species
- Abundance of Ecologically and Commercially Important Macroinvertebrates
- Macroinvertebrate diversity

Water quality parameters and a few biological parameters have not yet been incorporated into field surveys. Water quality parameters are especially important to the program and will commence upon the deployment of multi-parameter datasondes, which will occur once the full-time technical support position is filled (early 2015). While temperature loggers were installed in the Tumon, East Agana, and Piti sites in 2014, the multiparameter datasondes have not yet been used due to staffing limitations.

# Benefits and Feasibility of the Proposed Project

The data collected from coordinated monitoring activities provide a baseline of coral reef condition at several high priority reef areas around the island, and subsequent monitoring informs managers of trends in various ecosystem health parameters. This data is critical in informing management decisions and in assessing the effectiveness of management actions.

The development and implementation of the comprehensive monitoring strategy has strengthened partnerships between participating agencies and has resulted in a more coordinated, efficient approach to monitoring the health of Guam's coral reef resources. The core monitoring team consists of personnel from the UOGML and NOAA PIRO, with occasional participation by biologists with the Dept. of Agriculture's Division of Aquatic and Wildlife Resources (DAWR) and the Guam Environmental Protection Agency (GEPA).

Several data sets generated through the long-term monitoring program currently reside in a relational database accessible through a web-based data entry portal, a system developed by the NOAA Coral Reef Ecosystem Division (CRED) and BSP. The monitoring data management system has significantly improved the management of the large amount of coral reef monitoring data generated by the long-term monitoring program. Development of the data management system is currently halted, with the incorporation of benthic cover data awaiting further assistance from CREP staff. Plans for the addition of other data sets generated by the long-term monitoring program, as well as data generated by the NOAA PIRO-supported Guam Community Coral Reef Monitoring Program and the UOGML Reef Flat Monitoring Program are currently tabled until funding and CREP staff time become available. An online data distribution application will also be developed if funding becomes available; such an application would significantly improve access to the data by end users. To facilitate broader awareness of the available data sets, metadata have been developed for the coral quadrat, fish, and macroinvertebrate datasets by NOAA CRED and the monitoring coordinator have been posted to CoRIS.

The results of data analyses are summarized in periodic reports made available to the public, such as the report released in December 2011 entitled "Comprehensive long-term monitoring at permanent sites on Guam: A report of program status and presentation of preliminary baseline data and power analyses results for the Tumon Bay, East Agana Bay, and Western Shoals sites" and the report released in December 2012 entitled "Comprehensive long-term monitoring at permanent sites on Guam: 2012 status report." General information about the program is currently provided with newsletter articles, online videos, blog posts, and presentations. With the hiring of the full-time technical support we have been able

to begin development of a website (<a href="https://guamcoralreefmonitoring.wordpress.com/">https://guamcoralreefmonitoring.wordpress.com/</a>), which provides general information about the program and serves as a clearinghouse for reports, articles, videos, and other content related to the monitoring program. Web links to a few examples of outreach materials generated by monitoring team members and by others who wished to highlight the work of the monitoring team can be found in previous grant proposals.

The release of a major report that includes an analysis of time series data from the Tumon Bay and East Agana Bay sites as well as a presentation of baseline data from the other five sites has been delayed pending the completion of the significant amount of field work and data management associated with the island-wide reef resilience assessment mentioned above. Progress has been made in analyzing the data, but further analysis must be carried out and the results synthesized before they can be released.

Raw data collected through the monitoring program are provided upon request to resource agencies, research teams, and others. For example, the Global Coral Reef Monitoring Program was recently given all available benthic cover, coral colony, and macroinvertebrate data collected by the monitoring program for use in a meta-analysis of changes in coral reef condition across the Indo-Pacific, and the Monitoring Program Coordinator will contribute to the integration of monitoring program data into this analysis; fish data will be provided upon completion of quality control. In addition, all coral quadrat observational data were provided to a NOAA PIRO contractor who was tasked with developing a database of the known locations of the ESA-listed coral species and other species of interest. Several data sets generated by the long-term monitoring program will also be utilized in the reef resilience study. Anecdotal reports and the results of preliminary analyses of data obtained through monitoring program activities are also regularly presented to resource agency staff at relevant multi-partner meetings and communicated via email, telephone conversations, and in-person in an effort to provide up-to-date information on the status of Guam's reef resources.

The long-term monitoring program continues to contribute to local monitoring capacity through the continued employment of a monitoring coordinator and the rotating employment of three part-time monitoring assistants. Thus far, the program has provided part-time employment for a total of nine graduate students from the University of Guam Marine Laboratory. Participation in the long-term monitoring program has provided these individuals with a wide range of experiences, and a level and quality of participation in sampling design, protocol development, procurement, data collection, and data analysis that most have not previously experienced.

The UOGML reef flat monitoring program will continue to provide detailed information about the condition of coral communities on key reef flat sites along the western coast of Guam, focusing primarily on the effect of temperature and nutrients on coral disease, bleaching, and other coral health concerns. The focus on reef flat sites, the detailed coral condition data, and the greater temporal resolution make this program a strong supplement to the long-term monitoring program. Work has continued in organizing the multiple years of data collected through the reef flat monitoring program in an Access database, and if funding becomes available will be migrated to the Guam Monitoring Data Management System. Dr. Raymundo is planning a more comprehensive analysis of the copious data, the results of which are planned for presentation in a peer-reviewed publication.

#### Methods

The strategy for the comprehensive long-term monitoring of priority reef areas has six main components: Coordination, Training, Site Establishment, Site Monitoring, Data Analysis, and Reporting.

# Coordination

A Monitoring Coordinator was hired in 2007 to coordinate monitoring efforts carried out by local and federal agencies/institutions as well as to supervise and participate in the design, data collection, data

analysis, and reporting efforts associated with the long monitoring of several permanent sites around the island. This individual facilitates communication between monitoring entities, supervises three monitoring assistants, coordinates training and calibration sessions prior to each field season, schedules and participates in core monitoring activities, coordinates and carries out data management activities, conducts data analyses, compiles reports, and produces outreach materials. The coordinator also assists local resource agencies with resource assessments through assistance with planning and participation in field surveys.

### **Training**

Capacity building continues to be a top priority for the GCRMG. In order to collect quality data, all monitoring personnel are trained in the appropriate survey methods and calibrated in order to minimize observer bias. Standard Operating Procedures (SOPs) have been developed for each of the survey techniques and are updated as necessary. These SOPs are provided to all of the personnel working on the monitoring program or using the data, and serve to improve continuity and consistency between current and future observers.

# Site Selection

The high priority reef areas currently targeted for long-term monitoring include Tumon Bay, East Agana Bay, Western Shoals (Apra Harbor), Piti Bay, Achang, Cocos-East, and Fouha Bay. Each site was selected by the GCRMG after consideration of each site's cultural and economic importance, the number of other management activities in the watershed, the amount and quality of available data collected by other efforts at the site, MPA status, accessibility, and other factors. In order to achieve a relatively high level of detection and significant power with a reasonable number of samples, sampling at most sites (with the exception of Western Shoals and Fouha Bay) is restricted to the submarine terrace, which is an area of relatively gentle slope that is found between the base of the high wave energy reef front and the steeper lower reef slope. A detailed account of the reasoning behind the selection of each site and the targeting of the submarine terrace zone can be found previous grant proposals.

# Sampling design

The updated monitoring strategy calls for a stratified random sampling design and the combined use of both fixed and non-fixed sampling stations. This general approach is used for most sites (with the exception of Fouha Bay, which has relatively little reef area), but the details of the sampling design may differ between sites. However, sampling strategies and survey methods are made consistent across sites to the fullest extent possible in order to maximize the ability to make between-site comparisons. The locations of sampling stations are generated randomly using Geographic Information System (GIS) software. Even-numbered stations are fixed, while odd-numbered stations are unfixed; a new set of rerandomized, unfixed stations are generated for subsequent visits. Data collection for most sites is currently focused on hardbottom habitat of the outer reef slope terrace, between the depths of 7 and 15 m. Monitoring at the Western Shoals site is currently focused within three strata, including the reef slope on the western half of the shoals, the reef flat margin on the western half of the shoals, and the reef flat margin on the eastern half of the shoals. Data collection in the Fouha Bay site focuses on areas towards the inner portion of the bay (3 transects) as well as the outer portion of the bay (5 on north side and 5 on south side).

#### Site Monitoring

Site monitoring currently involves the collection of data for benthic habitat and associated biological communities parameters listed above. The original intent was to visit all sites annually, but it has become clear that the large number of sampling stations required to attain a reasonably high level of detection and high level of power with relatively limited resources make this target unrealistic. A new sampling plan has been developed that involves the alternation between surveying all sampling stations (permanent and non-permanent) stations and surveying only permanent stations. It may also be necessary to limit data

collection for less accessible sites, such as Achang and Cocos-East, to biennial visits. Preparation for water quality monitoring, including training and equipment testing and calibration, began in 2015, but the commencement of the reef resilience surveys and staffing limitations prevented the deployment of the datasondes.

# Survey logistics/permanent site establishment

Each sampling station is located using a GPS receiver. Upon reaching a station's location, a small lead fishing weight and line tied to a buoy is dropped. In optimal situations where at least four divers are available, two divers enter the water first to carry out the reef fish surveys. Starting at the weight tied to the buoy, a 30-meter transect is laid out. The transect is laid out in a clockwise direction (clockwise from a planar view of Guam, following the depth contour if it is readily determined, or at a previously-determined heading perpendicular to the reef margin if the area is relatively flat and a depth contour is not readily discernable. For previously established stations, divers locate the rebar marking the beginning of the transect and lay out the tape in line with the existing rebar. The two or more divers conducting the benthic surveys enter the water after the fish surveys are completed. For fixed sampling stations, 24" rebar is installed at the beginning of the transect; four-inch concrete nails are installed at two or more of the corners of each quadrat. For stations where high cover prevents the installation of rebar, a small PVC float is tied to dead coral at the beginning of the transect and large zip ties are placed at the beginning, middle, and end of the transect. Small zip ties are used to mark two or more corners of each permanent quadrat location in high coral cover areas.

# Qualitative surveys

Short qualitative surveys are conducted at each station when possible to establish species lists for key taxa and to characterize the site. These surveys are usually conducted immediately before or after the quantitative surveys, when time is available. In combination with the quantitative data, the qualitative data will contribute to a master species list and general site description for each site that can be referenced by monitoring personnel and local agencies. More comprehensive biodiversity surveys, including genetic sampling, may be carried out in the future.

# Water Quality

Temperature loggers have been deployed at most sites, but, as mentioned above, the deployment of the multiparameter datasondes was further delayed by the team's focus on the reef resilience project and staffing limitations. Once hired, the new full-time technical support staff will be responsible for overseeing the program's water quality monitoring activities, including the deployment and maintenance of the datasondes. Water column profiles will be carried out using a datasonde at each sampling station according to Guam EPA's EMAP QAPP20032 procedures; the datasonde is equipped for conductivity/salinity, depth, dissolved oxygen, pH, temperature and turbidity. Temperature loggers have been deployed at the Tumon, East Agana, Piti and Achang sites in 2014 and collected and new ones deployed at the Tumon and East Agana sites in 2015. Temperature loggers were also deployed at the Fouha Bay site in 2015. At least one, possibly two datasondes equipped for conductivity/salinity, depth, dissolved oxygen, pH, temperature and turbidity will be deployed at select sites for long term in situ monitoring. Additionally, an array of conductivity/temperature loggers will be deployed along the Tumon Bay and East Agana Bay monitoring sites in order to improve our understanding of the impacts of submarine freshwater discharge on reef communities at those sites. The conductivity/temperature loggers were to be deployed in 2015 but prior to deployment it was discovered that the batteries for most of the instruments were no longer working and needed replaced. The loggers have been sent off island for servicing using funds reprogrammed from a previous grant.

<sup>&</sup>lt;sup>2</sup> Guam Environmental Protection Agency. 2003. Environmental Monitoring and Assessment Program (EMAP) Coastal Sampling for Guam and Micronesia Region: Quality Assurance Project Plan (QAPP). Guam EPA, Tiyan Guam. 82pp.

#### Benthic Habitat

Benthic Cover

Benthic cover and coral and algal generic diversity are currently being assessed using digital photo transects. Non-overlapping digital photos along each transect with a digital point and shoot camera mounted on a PVC frame. Initially, photos were taken every 0.5 meters along the transect tape, but in order to minimize overlap (especially at high rugosity reef areas) photos are now taken every 1 m. The percent cover for various benthic cover types is estimated from the images using Coral Point Count (CPCe). The CPCe analysis was initially carried out using 25 points per frame, stratified using a five by five grid, and now is carried out using 16 points per frame, stratified using a four by four grid.

# Coral Community

Shortly after the first diver begins the photo transect, another diver then identifies and measures all coral colonies within 0.5 x 0.5 m quadrats placed at 0 m, 5 m, 10 m, 15 m, and 20 m along the right side of the transect. Percent old dead, percent recent dead, and disease type and severity observations are recorded for each colony. The cause of tissue mortality is noted if it can be determined with a reasonable degree of confidence. Measurements of the longest dimension and the width of the colony perpendicular to the longest dimension are made. An effort is made to carefully count all coral recruits/juvenile corals in order to assess the rates of coral recruitment to natural substrate. Care is taken to prevent the count of remnants of larger colonies as coral recruits/juvenile corals. Any tissue isolate suspected of being a remnant of a larger colony will be noted as such and taken into account during analysis, in order to prevent the calculation of erroneous coral recruitment rates. At least two photos are taken of each quadrat in order to maintain a photographic record of all quadrats. These photos may allow for the determination of planar growth rates for various coral species and for investigating benthic organism dynamics that can be appropriately observed at an inter-annual time scale.

#### Rugosity

Beginning with the 2012 field season, rugosity is measured at each sampling station using the standard chain-and-tape method at one 10 m section along the 25 m transect at each sampling station. A diver carefully drapes a light chain over the substrate along a taut transect tape, paying out as much chain as is necessary to conform to the substrate profile along the length of the tape. The diver measures and records the length of chain needed to cover a 10 m distance.

## Associated Biological Communities

Reef Fish

The fish team currently uses a Stationary Point Count Method (SPC) adapted from Ault et al. (2006) and NOAA Fisheries Coral Reef Ecosystem Division (Williams et al., 2011) at all sites. To conduct the surveys a pair of fish divers descend and deploy a 30 m transect across the substratum. Divers are positioned at 7.5 m and 22.5 m and count fish within a 7.5 m radius cylinder extending from the substrate to the limits of vertical visibility. The simultaneous surveys start once the divers deploy the transect and both divers are ready to proceed. The SPC surveys are conducted in two parts. During the first five minutes, divers record all species observed within the cylinder, but do not count or size fish. All fish are identified to species level or the next lowest taxonomic level possible (genus or family). If a rare fish (shark, species of concern, large mobile predators, etc.) is observed during the first 5 minutes, it is counted and sized, but the diver notes that it was not an instantaneous count. After the first five minutes divers enumerate fish, one species grouping at a time, using rapid visual sweeps of the plot. All fish of the target species within the SPC boundaries are counted and sized to the nearest centimeter; however, divers use size classes for large schools or high densities. This process is continued until all of the listed species are counted. At the end of the survey, divers swim throughout the 7.5m radius plot to enumerate small and cryptic species that were not captured from the stationary central position. Surveys are not completed if the visibility is less than 7.5 m.

#### **Macroinvertebrates**

Counts of commercially and ecologically important macroinvertebrate species (*Acanthaster*, echinoids, holothurians, *Tridacna*, etc.) are made within a 4 m belt (2 meters on either side of the transect). The size of *Tridacna* are measured to the nearest cm.

#### Rare Species

Protected or rare species utilizing the general area around the site are recorded and photographed. These species include marine mammals, sea turtles, *Bolbometopon muricatum*, and *Cheilinus undulatus*. Data will include species, number, activity, and size when possible.

# Data Analysis

Data collected from each of the monitoring sites is first explored in multivariate space using PRIMER and the PERMANOVA add-on, is examined using several types of power analyses in order to determine optimum sample sizes, and the generation of descriptive statistics for multiple coral reef health parameters. The exploration of datasets within multivariate space using tools such as Principle Component Analysis (PCO), Multidimensional Scaling (MDS), Distance-based Linear Models, SIMPER analysis, and 2D Bubble Plots, allows for the visualization of the spatial structure of the data and the exploration of the possible influence of environmental factors on this spatial structure. Univariate power analyses are carried out separately on various parameters for sampling stations from different strata or other sampling station groupings; multivariate power analyses are also carried out when appropriate. Dominance plots and PCOs of cumulative means are also generated within PRIMER/PERMANOVA to examine the shape of the cumulative dominance curve.

Coral community parameters examined within and potentially between sites include the diversity of coral taxa (species level when possible), relative abundance, and evenness. Coral community size structure is also examined across strata and across entire monitoring sites. Aspects of coral condition, such as partial mortality (old and recent), sources of mortality, and coral disease prevalence are calculated for each sampling station and for each monitoring site/strata. Reef fish density and biomass are calculated, aggregated by species and by family. Total species richness is calculated for each site, as is the percentage of occurrence of each species across sampling stations. Macroinvertebrate diversity, density, and relative abundance are generated for species and species groups.

Comparisons of data between monitoring sites have not yet been conducted, but such comparisons may be made at a later date once an adequate understanding of factors influencing the biological communities at each site is achieved and comparisons of one or more datasets is determined to be appropriate. When appropriate, comparisons of various parameters between reefs and between sampling periods will make use of a One-Way Analysis of Variance (ANOVA) or Repeated Measures ANOVA, or other appropriate statistical tests, to determine if any differences are statistically significant. Regression analyses will be used to examine relationships between biological parameters and environmental variables. Multidimensional scaling and other multidimensional statistical tools will be used to visualize similarities and dissimilarities between reef communities. Modifications to statistical analyses carried out on data between sampling periods will have to be made to account for the combined use of fixed and non-fixed transects and quadrats. Support will be sought by the National Park Service and others utilizing this sampling approach. Assistance by Dr. Houk, now with the UOG Marine Lab, will also be sought in the further analysis of the baseline data and data collected at subsequent sampling periods.

# Data Management and Reporting

A relational database and associated data entry application, which were developed through collaboration between NOAA CRED Information Services staff, BSP, and now UOGML, are currently in use by

monitoring program staff. The database currently houses the coral quadrat, reef fish, and macroinvertebrate datasets. Most of the 2010-2015 observations for each dataset have been added to the database, although the QC of some of the fish data must still be performed. Work began on expanding the monitoring data management system to include the benthic cover data, but stalled before completion as a result of a lack of NOAA CREP staff time and funding. It is anticipated that the final steps to integrate the benthic cover data will be carried out in-kind by NOAA CREP staff by the of 2016. It is not clear if funding will be provided to NOAA CREP to further expand the data management system to include water quality monitoring data and data collected by the Reef Flat Monitoring and Community Coral Reef Monitoring programs, or to develop an application for data distribution. The Monitoring Program Coordinator and NOAA CREP staff will continue to seek this funding, as these additions to the data management system will provide significant benefit in the management and distribution of data collected by several monitoring efforts.

The monitoring coordinator will coordinate and compile annual reports summarizing the data for resource managers. This information will be included in Guam's chapter of future NOAA *Status of the Coral Reef Ecosystems of the U.S. and Freely Associated* States reports and will be submitted to CoRIS. As described above, with the availability of data from four visits is available for the Tumon Bay and East Agana Bay sites, two visits to the Piti site, and baseline data for several other sites a major report will be released upon completion of the reef resilience project and the analysis of the long-term monitoring data. This report will include a detailed description of the baseline condition of the newly-established sites, a description of changes in key ecosystem condition parameters for the Tumon Bay and East Agana sites between 2010 and 2015, a description of potential causes of any changes in these parameters and their relevance to coral reef management, and suggestions for management activities that could address issues identified through monitoring program efforts.

The program will be reviewed each year to determine its effectiveness and to decide if any modifications need to be made to the monitoring strategy. Any updates or changes will be incorporated into the following year's training and will be documented for future reference.

# **Project Timeline and Milestones**

	Year 1				Year 2				
A 04::4	1st Quarte	2nd Quarte	3rd Quarte	4th Quarte	1st Quarte	2nd Quarte	3rd Quarte	4th Quarte	
Activity	r	r	r	r	r	r	r	r	
Hire new field personnel									
Purchase equipment and supplies									
Training									
Scheduling									
Monitor existing sites									
Data entry/QC									
Data analysis									
Annual summary report									
Evaluate program effectiveness									

# **UOGML Reef Flat Monitoring Program**

At present, seven reef flats along Guam's western coast are being monitored for coral health impacts and nutrient levels. Sites were chosen to represent a gradient of water quality impacts, starting with the relatively pristine reference point to the north, Haputo, and ending with Luminao reef flat, seaward of Apra Harbor. Sites in between these end points are as follows: Tanguisson, nearshore to the sewage outfall pipe; Tumon Bay; West Agaňa, nearshore of the sewage outfall pipe; Adelup; and Piti Bomb Holes Marine Reserve. Each of these sites is currently monitored quarterly, along three 20 m x 2 m belt transects established on the reef flat at 1-2 m depth. Temperature loggers have been placed at three of these sites and multiple coral colonies have been tagged for individual monitoring. In addition, two genera of macroalgae and a single soft coral are sampled during monitoring for isotope analyses.

The monitoring of these valuable, but highly vulnerable reef sites provides a unique opportunity to have a program in place that has established a baseline or reference point against which to measure predicted improvements in response to management actions or impacts in response to increased stress from climate change and the planned military build-up. The data generated through the reef flat monitoring program provides a strong complement to the data collected at the outer reef slope sites targeted with the long-term monitoring program, particularly at locations, such as Tumon Bay and Piti Bay, where both the reef flat and outer reef slope communities with these bays are concurrently addressed through these two monitoring programs. The reef flat monitoring program provides information to managers for a critical, dynamic, yet vulnerable reef zone, and is an essential component of a comprehensive coral reef monitoring strategy.

Task Budget Summary Table

Personn	el	FY2018	FY2019
111	Monitoring coordinator	\$48,490.00	\$50,328.00
111	Technical support specialist	\$39,965.00	\$41,479.00
111	2 Monitoring assistants	\$27,000.00	\$27,000.00
111	Administrative support (Admin Asst)	\$17,606.00	\$18,164.00
111	1 Reef flat program field personnel	\$4,000.00	\$4,000.00
Fringe I	Benefits		
113	Monitoring coordinator	\$18,687.00	\$19,217.00
113	Technical support specialist	\$13,760.00	\$14,197.00
113	Monitoring assistants	\$10,080.00	\$10,080.00
113	Administrative support (Admin Asst)	\$5,156.00	\$5,308.00
113	Reef flat program field personnel	\$1,440.00	\$1,440.00
Supplies			
240	Field and office supplies	\$478.00	\$340.00
230	Scuba equipment maintenance	\$900.00	\$900.00
230	Scuba tank rental	\$1,400.00	\$1,400.00
Contrac	tual		
230	Boat rental (Long-term Monitoring Program)	\$9,258.00	\$4,367.00
230	Boat and truck rental (Reef Flat Monitoring Program)	\$1,780.00	\$1,780.00
	TOTAL	\$200,000.00	\$200,000.00

# **Budget** overview

Beginning in July 2016 the Monitoring Coordinator decreased the number of hours he works on the long-term monitoring project to 41 hours per pay period (51% of his total hours), and with the funds made available with this arrangement a third monitoring student was hired to assist the Technical Support Specialist and the other two monitoring assistants with field work and other responsibilities. However, it has recently come to the attention of the Monitoring Coordinator that the current Technical Support Specialist is intending to resign in December 2016, which would require the hiring and training of a new person. This individual must be able to expertly execute either the coral quadrat or reef fish surveys, and to take on some of the responsibilities of the Monitoring Coordinator, in order for the reduced hour arrangement for the Monitoring Coordinator to work without compromising the quality of the monitoring program or of the EPSCoR-funded outcomes for which he is responsible. It is due to the uncertainty regarding the success of this arrangement that this grant proposal includes a request for funding to cover the full salary and benefits of the Monitoring Coordinator for FY2018 and FY2019.

#### Personnel

The coordinator position is a full time position with an expected salary of \$48,490.00 for FY2018 and \$50,328.00 for FY2019. The technical support position is also a full time position, with an expected salary of \$39,965.00 for FY2018 and \$41,479.00 for FY2019. Beginning in FY2017 the Monitoring Coordinator will be classified as a Research Associate III, at Grade N Step 3, while the new Technical Support Specialist, depending on their qualifications, could be slotted as high as Grade L Step 3 at the time of their hire in early FY2017. The salaries proposed here account for increments required for UOG employees, as determined using the University of Guam's General Pay Plan, to which the Monitoring Coordinator and Technical Support Specialist positions were transitioned during FY2016.

Because the Monitoring Coordinator will transition to 100% funding through Monitoring Program funds, the number of part-time (20 hrs/wk) monitoring assistants will be reduced from three to two. The monitoring assistant positions are currently filled by UOGML graduate students, but may also be filled by other qualified persons in the event that qualified graduate students are not available. The salary for field personnel was calculated using a \$14.91/hr rate for UOGML graduate students. While a full year's work by the monitoring assistants would amount to an annual salary of \$15,506.40 per monitoring assistant for a total of \$31,012.80/yr, an amount of \$27,000 was requested to account for short periods during which fewer than two monitoring assistants are employed and periods when the assistants are not able to work the full 20 hours per week. An additional \$4,000/year is requested to fund the part-time employment of one graduate student to work with Dr. Raymundo on the reef flat monitoring program.

The administrative assistant is responsible for providing direct administrative and office support services for the Long Term Monitoring and Reef Flat Monitoring project. Responsibilities include prepare and submit the semiannual financial reports for submission to the Bureau, prepare and submit the monthly and or quarterly invoices for reimbursement along with the corresponding documentation to the Bureau upon the department head signature and general accountant supervisor signature, assists in the preparation of the grant funded budget, prepare and submit the recruitment actions for the grant funded positions to include preparation of job position description to UOG Human Resource Division, consults and advises grant funded positions on personnel matters, maintain and track the grant funded position time and effort sheets, maintains the project file, maintains the project budget by object classification and monitors the funds allocated to each object class to ensure the PI is aware of the balance on the project, process requisitions to include obtaining three price quotations, prepares Request for Information, and reviews and process vendor invoices for payment. During an 80 hour week, the Administrative Assistant allocates 32 hours or 40% of her time per pay period providing direct administrative and office support to the project. Estimated budget is as follows: Annual Salary per annual \$44,015 x .40 percent = \$17,606 / 26

pay period = \$677.15 ppd in FY 2018 and Annual Salary per annual \$45,411 x .40 percent = \$18,164 / 26 pay period = \$698.63 ppd in FY2019.

# Fringe Benefits

The detail Fringe benefits for the Monitoring Coordinator, Technical Support, and Administrative Assistant in FY2018 and FY2019 is depicted in the table below.

Please be apprised the administrative assistant fringe benefits is prorated. During an 80 hour week, the Administrative Assistant allocates 32 hours or 40% of her time per pay period providing direct administrative and office support to the project. Estimated budget is as follows for Year 1: Annual Fringe Benefit per annual \$12,889 ( $$12,889 \times .40 = $5156/26 \text{ ppd} = $198.31$ ). Estimated budget is as follows for Year 2: Annual Fringe Benefit per annual \$13,292 ( $$13,292 \times .40 = $5317/26 \text{ ppd} = $204.50$ ).

Long Term Monitoring Position	Annual Salary	Retirement 27.41%	Retire - RDI 19.01* 26ppd	medicare 1.45%	life - 7.17 x 26ppd)	medical	dental	Total Fringe	40% or 32 hours
Monitoring Coordinator Year 1	\$48,490	\$13,291	\$494	\$703	\$186	\$3,773	\$239	\$18,687	
Monitoring Coordinator Year 2	\$50,328	\$13,795	\$494	\$730	\$186	\$3,773	\$239	\$19,217	
Technical Support Specialist Year 1	\$39,965	\$10,954	\$494	\$579	\$186	\$1,321	\$224	\$13,760	
Technical Support Specialist Year 2	\$41,479	\$11,369	\$494	\$601	\$186	\$1,321	\$224	\$14,197	
Adm Asst Year 1	\$44,015	\$12,065	\$0	\$638	\$186	\$1,321	\$0	\$12,889	\$5,156
Adm Asst Year 2	\$45,411	\$12,447	\$0	\$658	\$186	\$0	\$0	\$13,292	\$5,317

#### **Supplies**

An estimated \$1,400.00/yr is required for the rental of scuba tanks for the long-term monitoring program. No funding for scuba tank rental is being requested for use in the reef flat monitoring program. An estimated \$900/yr is required to cover the costs of the annual maintenance of all scuba equipment. An estimated \$478 is required for consumable field and office supplies for the long-term monitoring program for Year 1 and \$240 for Year 2, while \$100/yr is requested for the reef flat monitoring program. Consumable field and office supplies for which funding is requested include transect tapes, slates, underwater paper, pencils, rebar and nails to mark the permanent sites, batteries, battery chargers, line, buoys, PVC and miscellaneous office supplies.

#### **Contractual**

\$9258 is requested to cover the costs associated with utilizing the University of Guam Marine Lab's boats for Year 1 and \$43697 for Year 2. The UOGML charges a rate of \$260/day; as such, the amounts requested would cover 36 trips in Year 1 and 17 trips in Year 2. The reduced amount for Year 2 is a result of the increasing proportion of the budget required to accommodate salary increments and associated increases in fringe benefits. While the 17 trips using Marine Lab boats in Year 2 will not allow the team to reach all of the sites intended for monitoring that year, we will rely heavily on the NOAA PIRO's Achilles, for which Val Brown and the Monitoring Coordinator have received training to operate. The 19' inflatable Achilles acquired by NOAA PIRO has been used to access the Fouha Bay site, and on calm days could be used to access all of the monitoring sites if necessary.

An additional \$1,780.00/yr is requested for the rental of a UOGML boat and truck for the reef flat monitoring program. The reef flat program will require the rental of a UOGML truck to access most of the monitoring sites, but will require a boat to access the Haputo Bay reef flat site. The UOGML truck rental rate is \$50/day and will be used for 20 days, while the boat rate is \$260/day and will be used for three days of monitoring (to access the Haputo Bay site, which cannot be accessed by shore).

# **Project Manager or Principal Investigator (PI)**

Principle Investigator: David R. Burdick, Research Associate

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# Task 7. Support for Public Outreach and Education

The goals of the public outreach and education Local Action Strategies (LAS) are to increase environmental education about the value of coral reefs from an ecosystem based approach through coordinated public awareness and outreach plans.

Guam Goal 1.3: Educate target stakeholder groups about the sedimentation issues associated with specific watershed uses and activities.

Guam Goal 1.4: Increase public awareness of how changes in household and commercial land use activities can contribute to improved reef condition.

Guam Objective 2.2: Create community management programs that increase public knowledge of, support for, and participation in marine preserves and science-based management.

# Summary

Effective and measured public outreach and education is a critical need for many natural resources agencies dealing with threats to coral reefs on Guam. Various partners in the Guam Coral Reef Initiatives Coordinating Committee, Government of Guam Agencies of the Guam First Advisory Council and Commission, Guam Nature Alliance (former Environmental Education Committee), the Environmental Education outreach professionals and various Local Action Strategy groups agree that public education and outreach is essential. In addition to that stated need, many government agencies such as the Department of Agriculture, Guam Environmental Protection Agency (EPA), University of Guam (UOG) Marine Lab, and Department of Parks and Recreation lack the trained staff and time to complete the amount of effective outreach and education.

In response to this need, and reviewer comments, an overall outreach and education strategy will be produced for Guam. The project has been included in the NA15NOS4190004 reprogramming, and will be spearheaded by the Bureau of Statistics and Plans, Guam Coastal Management Program in collaboration with our natural resource partners. The strategy, once completed, will be used by the Guam's CRCP, as well as other natural resource agencies to guide outreach and education projects.

This project will provide funding for continued outreach and education activities and items to support the "Guardians of the Reef Program", watershed tours and hikes, beach cleanup, Earth Month and community educational training, clinics, and workshops in collaboration with local and federal government natural resource agencies and nongovernmental organizational. Based on reviewer comments, funds will be used to hire a local contractor to prepare an overall Outreach and Education Strategy to address specific outreach and education goals. Additionally, funds will also support efforts and activities of the Guam

Nature Alliance (GNA) events and its subcommittees (hanom/freshwater, tano/land and tasi/sea), and media campaigns to educate the community "to connect or learn about Guam's environment", "about how resources are culturally significant and should be respected", and "calls to action to protect resources".

### **Task Description and Methodology**

This project is focused on providing effective messaging for education and outreach about threats to coral reefs. The activities to achieve this goal will include the following:

- Collaborate with the Guam Coastal Management Program in the Hiring a local contractor to prepare an overall Outreach and Education Strategy for Guam to address specific and outreach and education goals.
- Assist in the coordination of the Guardians of the Reef Program which aims at educating third grade students on topics related to Guam's coral reef ecosystems. In addition to coordinating the program which involves the scheduling of fieldtrips, training of the guardians (11th and 12th graders in high school) and transportation will also be provided.
- Support the Guam Nature Alliance (GNA) environmental awareness activities.
- Support increase environmental education outreach opportunities to include but not be limited to displays at public outreach venues; watershed hikes; clean ups; Service Learning Expo; Earth Month Activities; Local Action Strategies (LAS); and Guam's wildland fire campaign.

Guam's Guardians of the Reef is an ongoing environmental education program that educates 3rd grade elementary students about the importance of Guam's coral reefs, and it engages the "Guardians" as active stewards of Guam's coral reef ecosystem. This program has been around for nine years and has had positive responses from the education community and has impacted former Guardians. To quantify the success of the programs, the following quantitative data information will be collected and reported in the final report:

- 1. Number of high school students who become Guardians. (This data will be captured during the training held in January. Sign in sheet.)
- 2. Number of high schools that participate in the Guardians of the Reef. (This data will be captured during the training held in January. Sign in sheet.)
- 3. Number of new Guardians that were introduced to the Guardians outreach presentation when they were 3rd grader. (This data will be captured during the training held in January. The questions will be posed at the beginning of the training.)
- 4. Number of outreach presentations conducted at the elementary school broken down by number of students and name of school. (This data will be captured through the elementary teachers.)

Furthermore, BSP will utilize the survey to obtain feedback from the 3rd grade teachers on the outcome of the Guardian of the Reef presentation at their school. The results will be reported in the final progress report.

The outreach and education efforts will be lead by the Watershed Coordinator and assisted by the locally funded Planner I.

#### **Outcome and Products:**

These efforts will increase the public's understanding and support for marine preserves, watershed management, appropriate recreational uses and communicating science-based management with the general community. The completed Outreach and Education Strategy will be used to ensure projects and

programs are achieving desired conservation results, and inform future outreach and education efforts. Efforts will be supported by print, online and other materials and supplies to support outreach and educational efforts. Quantitative data will be provided based on the list of outreach events conducted, the number of outreach participants and or community involvement, organization partnered, and feedback from the Guardian of the Reef teachers on the outcome.

# **Project Schedule**

Year 1	Oct-	Nov-	Dec-	Jan-	Feb-	Mar-	Apr-	May-	Jun-	Jul-	Aug-	Sep-
Projects/Tasks	17	17	17	18	18	18	18	18	18	18	18	18
Guam Nature												
Alliance (GNA) and												
other NGO outreach												
activities												
Guardians of the												
Reef Program												
Development of												
Public Outreach												
Strategy												
Service Learning												

Year 2	Oct-	Nov-	Dec-	Jan-	Feb-	Mar-	Apr-	May-	Jun-	Jul-	Aug-	Sep-
Projects/Tasks	18	18	18	19	19	19	19	19	19	19	19	19
Guam Nature												
Alliance (GNA)												
and other NGO												
outreach activities												
Guardians of the												
Reef Program												
Public Outreach												
Strategy												
Service Learning												

# **Project Manager or Principal Investigator (PI)**

Anna Simeon, Watershed Coordinator Bureau of Statistics and Plans

Phone: 472-4201/2/3 Facsimile: 477-1812

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## Co Project Manager or Principal Investigator (Co PI)

Christian Benitez, Planner I Bureau of Statistics and Plans

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Email Address: christian.benitez@bsp.guam.gov

## **Budget and Justification**

Support for Public Environmental Education and Outreach-Year 1							
Category	Federal funds	In kind Matching funds	Total				
Personnel and Fringe: Planner II	\$0.00	\$17,427.00	\$17,427.00				

35% or 28 hours of the Planner II (Christian Benitez) will be directly involved in the coordination and implementation of the support for public environmental education and outreach task \$36530 salary + \$13260 fringe =  $$49790 \times 35\%$ 

Supplies \$1,000.00 \$0.00 \$1,000.00

Supply costs (\$1,000) to support the Guardians of the Reef Training. The itemized items are as follows: Miscellaneous outreach supplies to include 243 pcs x \$1.50 = \$365 color butcher paper, 1 dozen x 20 pkg x \$5 = \$100 colored pipe cleaners pkg, 1 dozen x  $10 \times $15 = $150$  color pencils, 1 dozen x  $10 \times $15 = $150$  color markers,25 pcs x \$2.00 = \$50 elementary scissors, 20 pcs x \$3 = \$60 scotch tape, clear plastic storage bins to store small supply  $4 \times $25 = $100$  for Guardian of the Reef Training for Year 1.

Contractual \$28,794.00 \$0.00 \$28,694.00

(230) Transportation (\$16,500) for the Simon Sanchez Traveling Ocean Fair and George Washington Marine Mania Puppet show to provide roundtrip transportation for the high school to present at the Elementary School (\$55 x 80 hours = \$4,400), Guardians of the Reef Program to provide roundtrip transportation for the high school Guardians from JFK, GW, SSHS, SHS to the 25 elementary schools \$55 per hour x 140 hours = \$7,700 and Guam Nature Alliance fieldtrips \$55 per hour x 80 hours = \$4,400

(230)Outreach and Education Items and Contractual Printing (\$12,294) such as Guardians of the Reef t-shirts (SMLG 150 x \$7 = \$1050, XL 20 x \$8 = \$160, 2XL 4 x \$10 = \$40), Guardian of the Reef Coloring Book printing (black and white pages, collated, folded, artwork ready (3000 x .12 = \$360), Pledge Cards (\$.095 x 3000 = \$285), Guardian of the Reef Survey ( $100 \times .10 = $10$ ) and Guardians of the Reef Review and Evaluation ( $130 \times $20.00$ ) = \$2600; contractual services to support coral reef conservation efforts to include but not be limited to displays at public outreach venues; watershed hikes; clean ups; outreach items for Guam's wildland fire campaign (\$3777), and Eyes on the Reef training videos (\$4012)

TOTALS \$29,794.00 \$17,427.00 \$47,121.00

Support for Public Environmental Education and Outreach-Year 2							
Category	Federal funds	Matching funds	Total				
Personnel and							
Fringe: Planner II	\$0.00	\$17,919.00	\$17,919.00				

35% or 28 hours of the Planner II (Christian Benitez) will be directly involved in the coordination and implementation of the support for public environmental education and outreach task \$37914 salary + \$13282 fringe = \$51196 x 35%

Contractual \$16,605.00 \$0.00 \$16,605.00

(230) Transportation (\$12,100) for the Simon Sanchez Traveling Ocean Fair and George Washington Marine Mania Puppet Show to provide roundtrip transportation for the high school to present at the Elementary School and Guam Nature Alliance field trip ( $\$55 \times 80 \text{ hours} = \$4400$ ), Guardians of the Reef Program to provide roundtrip transportation for the high school Guardians from JFK, GW, SSHS, SHS to the 25 elementary schools \$55 per hour x 140 hours = \$7,700

# Support for Public Environmental Education and Outreach-Year 2

(230) Outreach and Education Items and Contractual Printing (\$4505) such as Guardians of the Reef t-shirts (SMLG 150 x \$7 = \$1050, XL 20 x \$8 = \$160, 2XL 4 x \$10 = \$40), Guardian of the Reef Coloring Book printing (black and white pages, collated, folded, artwork ready (3000 x .12 = \$360), Pledge Cards (\$.095 x 3000 = \$285), Guardian of the Reef Survey ( $100 \times .10 = $10$ ) and Guardians of the Reef Review and Evaluation ( $130 \times $20.00$ ) = \$2600

TOTALS \$16,605.00 \$17,919.00 \$34,524.00

# Task 8. Staff Management Training for Grants and Cooperative Agreements

This is an administrative task

#### Introduction

In response to NOAA recommendations, this project will provide funds for grants and cooperative agreement training to relevant staff in order to more effectively manage cooperative agreements. The funds will be used for tuition only; instructor-led courses: options for remote, virtual, online or live classroom formats (not to include travel or per diem for live classroom format).

## Staff to attend the training:

- Chief Planner, Lola Leon Guerrero (Oversee the grant administration)
  - o Uniform Administrative Requirements for Federal Grants: 2 CFR 200 (Subparts A-D)
    - Online 6 weeks, \$869
  - o Cost Principles for Federal Grants: 2 CFR Part 200 (Subpart E) and FAR 31.2
    - Online 6 weeks, \$869
- Administrative Service Officer, Terry Cuabo (Review financial reports and prepare the SF424)
  - o Uniform Administrative Requirements for Federal Grants: 2 CFR 200 (Subparts A-D)
    - Online 6 weeks, \$869
  - o Cost Principles for Federal Grants: 2 CFR Part 200 (Subpart E) and FAR 31.2
    - Online 6 weeks, \$869
- Coral Reef Resilience Coordinator (Administers the grant.)
  - o Managing Federal Grants and Cooperative Agreements for Recipients
    - Online 6 weeks, \$869
  - o Uniform Administrative Requirements for Federal Grants: 2 CFR 200 (Subparts A-D)
    - Online 6 weeks, \$869

OR

- o Cost Principles for Federal Grants: 2 CFR Part 200 (Subpart E) and FAR 31.2
  - Online 6 weeks, \$869

#### **Task Outcomes or Products**

Grant funds will be used for the Chief Planner, Administrative Services Officer and Coral Reef Resilience Coordinator to their enhance capacity to administer and manage the programmatic and financial requirements under this cooperative agreement with the completion of the online Managing Federal Grants and Cooperative Agreements for Recipients, Uniform Administrative Requirements for Federal Grants: 2 CFR 200 (Subparts A-D), and or Cost Principles for Federal Grants: 2 CFR Part 200 (Subpart E) and FAR 31.2 through Management Concepts.

## **Schedule**

Year 1	OctDec	JanMar	AprJun	JulSep	OctDec	JanJun	AprJun	JulSep
Projects/Tasks	17	18	18	18	18	19	19	19
Staff Conduct								
Online Grants								
Training for								
Cooperative								
Agreement								
Staff Completes								
online Grants								
Training								

# **Project Manager or Principal Investigator (PI)**

Lola E. Leon Guerrero, Chief Planner

Bureau of Statistics and Plans

Phone: 472-4201/2/3 Facsimile: 477-1812

Email Address: lolalg@bsp.guam.gov

# **Budget and Justification**

Staff Grants Management Training Budget Summary-Year 1								
Category	Federal funds	Matching Funds	Total					
Contractual	\$5,214.00	\$0.00	\$5,214.00					
TOTALS	\$5,214.00	\$0.00	\$5,214.00					
Staff Gra	Staff Grants Management Training Budget Summary-Year 2							
Category	Federal funds	Matching Funds	Total					
Contractual	\$0.00	\$0.00	\$0.00					
TOTALS	\$0.00	\$0.00	\$0.00					

# Management Concepts Online Training:

- o Managing Federal Grants and Cooperative Agreements for Recipients
  - Online 6 weeks, \$869
- Uniform Administrative Requirements for Federal Grants: 2 CFR 200 (Subparts A-D)
  - Online 6 weeks, \$869 and or
- o Cost Principles for Federal Grants: 2 CFR Part 200 (Subpart E) and FAR 31.2
  - o Online 6 weeks, \$869

# Task 9. Bleaching Mitigation and Reef Resilience

This proposed project is an expansion of an existing one to "develop and test approaches for mitigation and rehabilitation after impacts" as it directly addresses an identified gap in our local knowledge of responses to stress events and restoration tools.

GOAL: Improve management of Guam's coral reef ecosystems to enhance resilience and recovery processes.

Objective 4. Improve management of Guam's Climate Change and Reef Resilience Local Action Strategy: Increase understanding of the causes of coral bleaching and disease-associated mortality in Guam and investigate approaches to stimulate recovery and rehabilitation

# Background:

Annual bleaching and extreme low tides events have impacted Guam's shallow nearshore reef communities for the past four years, from 2013 to 2016, resulting in mass mortality the extent of which remains to be fully quantified. Particularly hard-hit were staghorn Acropora, which constitute prime fish habitat areas in Guam's nearshore shallow reef flats and sea mounts. Local scientists and managers identified mitigation of this loss to be an urgent management need. To that end, an ocean nursery established in 2013 to house sexual coral recruits resulting from a SECORE International, Inc. spawning workshop was co-opted to house fragments retrieved from surviving populations. The original objective of this effort was to sample and culture fragments from what appeared to be resilient populations in an environment conducive to survival and growth to a larger size prior to outplanting to restore populations that had suffered extensive mortality. A research and management program has developed around this initial effort, with the following foci: 1) to determine species-specific responses to culture and outplanting; 2) to explore environmental drivers facilitating survival and reestablishment, for optimum selection of outplanting sites; 3) to engage community partners in the establishment of community-based coral gardens; and 4) to examine the recovery process in both surviving populations and outplanted populations, in terms of coral growth and health, and fish and invertebrate recruiting populations and the rate of expansion in coral cover over time.

To date, approximately 1000 fragments of six species of staghorn Acropora (A. pulchra, A. cf. intermedia, A. aspera, A. muricata, A. cf. muricata, and A. teres) are housed in the nursery. A subset of the first generation of fragments (an "F1" generation), growing for 14 months, were recently pruned to create a second set (an "F2" generation) to create additional fragments for outplanting. To reduce impacts to remaining in situ populations, it is intended to continue this pruning regimen of the existing nursery fragments, to supply material for outplants. Original fragments will be retained in the nursery to maintain a parent stock for additional fragments and outplants will consist of prunings from the original fragments. We will also attempt to produce sexually-based recruits by collecting gametes during predicted spawning events and crossing gametes from different populations. Our first staghorn spawning workshop, sponsored by SECORE Int'l., was held in April 2017, with scientists from 5 countries and local scientists and managers. We observed in situ spawning of A. pulchra and experimented with protocols to collect gametes based on patterns of spawning unique to staghorns. If we are able to incorporate collection and rearing of sexually-based recruits into our restoration protocols, it will increase the genetic diversity of outplanted populations and also allow us to create crosses from specific populations. Finally, we are currently in discussion with management agencies regarding other species of local concern that may benefit from this restoration approach.

Outplanting began with an initial small-scale experiment to test the effects of a nursery grow-out stage vs. direct transplantation of fragments from wild populations. The first community-based outplanting activity took place on April 22, 2017, Earth Day, with students and community partners supervised by UOG

Biology graduate students. Outplanting is designed to meet two objectives: 1) to involve the community in planting coral gardens, via the Guam Coral Reef Community Monitoring Program (GCRMP) and 2) to continue controlled experiments directed at improving outplanting protocols and increasing our understanding of the drivers of survival and resilience.

The Piti nursery currently consists of 4 individual modules (Fig. 1). Each module houses either upright or hanging coral fragments or settlement tiles, or a combination of both. The module design appears to be suited to Guam weather patterns and has remained stable over a three-year period, which included a direct hit by Typhoon Dolphin in 2015. We intend to expand the number of modules deployed in the Piti nursery, with funding from National Parks Service. However, given the high probability of direct hits by typhoons, it is important to spread the risk of potential damage to the nursery structures by adding a second nursery site. Cocos Lagoon, lying within the Manell-Geus Habitat Focus Area, has been selected as a potential site to establish a second nursery. This activity is the topic of the current funding request.



**Figure 1.** Piti coral ocean nursery showing recruitment tiles (A), hanging (B) and upright (C) fragments, and shade cloth (D) deployed to reduce bleaching threats during the summer season. Photo: L. Raymundo. fragments, and shade cloth (D) to reduce bleaching threats.

This proposal directly addresses **Objective 4** of Guam's **Climate Change and Reef Resilience Local Action Strategy:** To increase understanding of the causes of coral bleaching and disease-associated mortality in Guam and investigate approaches to stimulate recovery and rehabilitation. This proposed project is an expansion of an existing one to "develop and test approaches for mitigation and rehabilitation after impacts", as it directly addresses an identified gap in our local knowledge of responses to stress events and restoration tools.

# Methods and Approach:

The first step will involve community meetings and a meeting with local government officials, to introduce the Merizo community to the nursery plan and concept, underscoring the need for community partners and outlining the overall objective to reestablish viable staghorn communities within the Lagoon, as well as other species of interest within this habitat. We will coordinate with existing groups, such as the Guam Community Coral Reef Monitoring Program and Guam Eyes of the Reef, to assist in facilitating this activity. During these meetings, individuals with a strong interest in involvement in the project will be identified. Experience with the Piti nursery has shown that there is a need for weekly cleaning and maintenance work for up to one year, until a resident herbivore fish population develops, after which biweekly trips may be sufficient. Maintenance involves algal removal, securing loose fragments, monitoring health impacts such as bleaching, predation or disease, and deploying and cleaning shade cloth during predicted bleaching events. We plan that these activities will be undertaken by a team composed of the PI, a UOG Marine Lab graduate student, and trained community partners.

Initial meetings will be followed by reconnaissance surveys to identify an appropriate site for nursery deployment; one that allows some protection from severe storm activity and extreme low tide exposure, and lies outside fishing grounds and navigation routes (see Fig. 2 for proposed sites). During these surveys we will update our information on the condition of remaining staghorn beds within the Lagoon, to determine if any are able to provide a viable fragment source. We will also identify other potential culturable species of local management concern that are found exclusively in and around the Lagoon.

Once these initial steps are taken, three modules will be constructed and deployed in the location previously identified. Populating the modules with fragments will take place over the subsequent three months, sampling 8 cm unbranched fragments from extant populations of *Acropora aspera*, *A. pulchra*, and *A. muricata* in the south and southwestern quadrants of the island, (see Fig. 2). We will aim for a total of 500-800 fragments initially, relying on growth and subsequent pruning at one year to supply additional fragments. Staghorn species will primarily be cultured on weighted hanging ropes (B, in Fig. 1) while other species will be positioned upright on the top of the fragments (C, in Fig. 1). Settlement tiles containing recruits from spawning workshops may also be distributed within the nursery, once we establish success in this approach. Monitoring and maintenance will begin immediately and a database will be established to track coral performance, which will be evaluated in terms of overall health and growth rates (both linear extension rate and branching rate). Temperature at the nursery and recipient sites will also be monitored.

Establishing this nursery will be the focus of the first year of this project. Additional funding and personnel are required for the next phase of the project, which will involve expanding the nursery and coordinating outplanting efforts with community groups.



**Figure 2.** Map of the proposed nursery area, showing location of source populations for fragments (red stars) and potential nursery locations (yellow pentagons). The white dotted line identifies the boundary of the Achang Marine Preserve.

## Outcome and Products:

- Establishment of a coral nursery within the Manell-Geus Habitat Focus Area, consisting of a minimum of three modules
- Nursery-reared corals for future outplanting to mitigate bleaching-related mortality, obtained from surviving southern populations
- A monitoring and maintenance protocol for the nursery

## Schedule/Timeline:

It is planned that the one-year period covered by this proposal will encompass the following: MOU establishment between BSP and UOG; initial community meetings; nursery site, source and recipient sites reconnaissance; nursery construction and deployment; fragmentation and establishment of a culture population in the nursery; and establishment of a monitoring regime. The nursery and outplanting project will be expected to continue beyond this, dependent on additional future funding.

# Schedule

Year 1	OctDec	JanMar	AprJun	JulSep	OctDec	JanJun	AprJun	JulSep
Projects/Tasks	17	18	18	18	18	19	19	19
MOU establishment								
between BSP and								
UOG								
Initial community								
meetings								
nursery site, source								
and recipient sites								
reconnaissance								
nursery construction								
and deployment								
fragmentation and								
establishment of a								
culture population in								
the nursery; and								
establishment of a								
monitoring regime.								

# **Project Manager or Principal Investigator (PI)**

Principle Investigator: Laurie Raymundo

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Station, Mangilao, Guam 96913

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Email: ljraymundo@gmail.com

# **Budget and Justification:**

Requested budget for a one-year Cocos Lagoon coral nursery establishment project and funds will be subgranted to UOG in Year 1.

Bleaching Mitigation and Reef R	Bleaching Mitigation and Reef Resilience Budget Summary-Year 1								
Category	Federal funds	Matching Funds	Total						
Personnel									
111 RA salary, 12 months @ \$14.94/hr	\$17,330.00	\$0.00	\$17,330.00						
111 Administrative Support: Chief									
Business Officer @ 8% of time	\$7,873.25	\$0.00	\$7,873.25						
Fringe Benefits									
113 RA fringe benefits @ 19% of									
salary to include medicare, social									
security, and health benefits	\$3,243.00	\$0.00	\$3,243.00						
113 Administrative Support - Chief									
Business Officer Fringe Benefits:									
retirement, medicare and health									
benefits at 8% of time	\$2,351.75	\$0.00	\$2,351.75						

Bleaching Mitigation and Reef Ro	Bleaching Mitigation and Reef Resilience Budget Summary-Year 1								
Supplies									
240 Nursery platform materials	\$5,372.00	\$0.00	\$5,372.00						
240 Consumable supplies for the nursery  Contractual	\$4,000.00	\$0.00	\$4,000.00						
230 Boat rental (includes truck and boat captain) @ \$250/day)	\$9,000.00	\$0.00	\$9,000.00						
230 SCUBA tank rental @ \$6/tank *3 divers/day	\$540.00	\$0.00	\$540.00						
230 Dive certification (physical exam and safety courses)	\$1,000.00	\$0.00	\$1,000.00						
Stipend									
230 Community partner stipend @ \$8.25/hr * 10 hr/week	\$4,290.00	\$0.00	\$4,290.00						
TOTALS	\$55,000.00	\$0.00	\$55,000.00						

## **Budget** overview

The proposed budget for this two-year project is presented in Table 1. In order to expand, and properly care for, the nursery, a dedicated Research Assistant will be necessary; this person will be a graduate student under mentorship of L. Raymundo. Administrative Support is also necessary under Research Corporation of UOG. The Chief Business Officer will provide the administration support (HR, invoices, price quotation, procurement, financial reporting) to this project. Salary and benefits are calculated at the standard University of Guam rate, set by the Research Corporation of UOG. We also request a small stipend for the community member selected to assist with the project, as the time commitment will be considerable and long-term. Boat and SCUBA tank rental prices are based on the current price charged by UOG, and we also request funding for needed dive physicals and safety courses for two project personnel, as required by UOG's AAUS-certified dive program. Finally, nursery and consumable materials include pvc, ropes, buoys, marine epoxy, cement nails, underwater paper and replacement temperature loggers.

## Personnel and Fringe Benefits

The research assistant position is a part time position with an expected salary of \$17,330. The RCUOG will recruit a graduate student for this project. The research assistant time will be charged to the grant for the hours worked up to the expiration of the project. The research assistant fringe benefits will include medicare, social security, and health benefits. The administrative support position will be responsible for provided direct administrative support services to this project. Responsibilities include preparation and submission of financial reports, preparation of invoices for reimbursement along with corresponding documentation to the Bureau, recruitment of research assistant position, consults and advises grant funded positions on personnel matters, maintain and track the grant funded position time and effort sheets, maintains the project file, maintains the project budget by object classification and monitors the funds allocated to each object class to ensure the PI is aware of the balance on the project, process requisitions to include obtaining three price quotations, prepares Request for Information, and reviews and process vendor invoices for payment. During an 80 hour week, the Chief Business Officer will allocate up to 8% of her time to this project per pay period providing direct administrative support to the project. The administrative support fringe benefits will include retirement, medicare and health benefits.

# Supplies

An estimated \$9,372 is need for the project, \$5,372 is needed to purchase the necessary materials needed to build the nursery platform, and \$4,000 is needed to purchase the consumable supplies for the coral nursery to include pvc, ropes, buoys, marine epoxy, cement nails, underwater paper and replacement temperature loggers and miscellaneous office supplies.

## Contractual

A total of \$10,540 is requested to cover the cost association with the following: contractual a truck and boat captain at \$250 per hours up to 36 hours to access the proposed coral nursery site in Merizo at a budget of \$9,000; SCUBA tank rental @ \$6 per tank for three divers per day prices; and \$1000 is also request needed for dive physicals and safety courses for two project personnel as this is required by UOG's AAUS-certified dive program.

## Stipends

Request for stipend for the community member selected to assist with the project, as the time commitment will be considerable and long-term. RCUOG will look for a volunteer that will be given up to \$82.50 a week to provide assistance in the project.

# TABLE OF ANTICIPATED PRODUCTS AND OUTCOMES

Tas	k or Project	Working Title of Product	Type or Format	Expected Date Availability
Task 1.1 and 1.2	Coral Reef Watershed Coordinator	Partnership with Organizations, Increase outreach on Guam's Watershed	Watershed restoration projects	9/30/2019
Task 2.1 and 2.2	Coral Reef Resilience Coordinator	Coordination of Reef Response team, Coral Restoration and reef resilience	Reef Response team trainings, workshop	9/30/2019
Task 3.1 and 3.2	Travel	Travel to USCRTF meetings	Coral Reef POC and Governor attendance at meetings	9/30/2019
Task 4.1 amd 4.2	AIC Dues <sup>1</sup>	AIC Dues Paid	Coral Reef POC informed, and attendance at AIC meetings and conference calls	10/1/2017 Year 1 and 10/1/2018 Year 2
Task 5.1 and 5.2	Coral Reef Fellows Program <sup>2</sup>	Coral Reef Fellowship	Coral Reef Fellow	9/30/2019
Task 6.1 and 6.2	Comprehensive Long Term Monitoring at Permanent Sites on Guam	Annual Monitoring Summary	Publication and results of scientific research	12/30/2019
Task 7.1 and 7.2	Support for Public Environmental Education and Outreach	outreach and educational materials	outreach and educational materials; increased awareness	9/30/2019
Task 8.1	Staff Management Training For Grants and Cooperative Agreements	Coral Reef Resilience Coordinator, Chief Planner, and ASO complete online training (certificate)	Coral Reef Resilience Coordinator, Chief Planner, and ASO informed about the 2 CFR 200 requirements	9/30/2019
Task 9.1	Bleaching Mitigation and Reef Resilience	Coral nursery within the Manell-Geus Habitat Focus Area for future outplanting	Construction and deployment of modules in cocos lagoon for nursery-reared corals for future outplanting	9/30/2019

# BUDGET NARRATIVE

	Guam's Overall FY 2017 - 2018 CRCP Budget Summary Year 1								
	Category		Computation	Federal Funds	Matching Funds				
Personn	el								
		Coral Reef Watershed Coordinator	Grade M, Step 2 \$20.340 x 2080 hours x						
Task 1	111	Salary	100% x 1 year	\$42,307	\$0				
			Grade M, Step 1 \$19.597 x 1560 hours for						
Task 2	111	Coral Reef Resilience Coordinator	9 mos	\$30,572	\$0				
			\$70,183 x 35% of time or 28 hours =						
Task 2	111	Chief Planner	\$24,564	\$0	\$24,564				
			$36530 \times 35\%$ of time or 28 hours =						
Task 7	111	Planner II	\$12,786	\$0	\$12,786				
			Subtotal	\$72,879	\$37,350				

Budget Narrative: Task 1 The Coral Reef Watershed Coordinator is essential to the program and a need exist to continue to have a staff to coordinate and address restoration efforts and implementation of restoration projects in Guam watersheds. The watershed coordinator will work with business partners, village communities, etc. to relay information, provide technical assistance and facilitate training sessions for Best Management Practices (BMPs) and watershed management tools as well as to work with specific community projects from the Conservation Action Plan for watersheds, such as reforestation, removal of invasive species, and creation of rain gardens, among others in collaboration with Guam's State Historic Preservation Officer. The watershed coordinator will collaborate with WERI on the recommendations for watershed management priorities in Geus to help address issues with sedimentation on land and in near-shore communities.

Task 2 The Reef Resilience Coordinator is essential to the program as a need exist to have a staff to coordinate the Coral Reef Response Team and facilitating response activities, implementing the Reef Resilience Strategy, supporting the US Coral Reef Task Force and the All Islands Committee, and preparing grant proposals and reports while overseeing the CRCP-funded projects.

#### Fringe

Task 1	113	Coral Reef Watershed Coordinator Fringe Benefits	(Grade M, Step 2) Fringe Benefits \$42,307 x 27.71% Retirement (\$11,723), Medicare (\$613), medical (\$1321), dental (\$224), Life (\$186), DDI @ \$19.01 x 26PP (\$495) x 100% = \$14,562	\$14,562	\$0
			(Grade M, Step 1) January 2018 through September 2018 (9 months) @ 27.71% Retirement (\$8,471), Medicare (\$443), medical (\$1,321), dental (\$224), Life		
		Coral Reef Resilience Coordinator	(\$186), DDI @ \$19.01 x 26PP (\$495) x		
Task 2	113	Fringe Benefits	100% =\$11,141	\$11,141	\$0
			\$22,343 x 35% of time or 28 hours =		
Task 2	113	Chief Planner Fringe Benefits	\$7,820	\$0	\$7,820
Task 7	113	Planner I	\$13260 x 35% of time or 28 hours = \$4641	\$0	\$4,641
			Subtotal	\$25,703	\$12,461

Budget Narrative: Task 1 The Coral Reef Watershed Coordinator is essential to the program and will be responsible for the coordination and leadership of addressing restoration efforts and implementation of restoration projects in Guam watersheds. (Grade M, Step 2) Fringe Benefits \$42,307 x 27.71% Retirement (\$12,629), Medicare (\$661), medical (\$1321), dental (\$224), Life (\$186), DDI (\$495) x 100% = \$15,515

Task 2 The Reef Resilience Coordinator is essential to the program and will be responsible for coordinating the Coral Reef Response Team and facilitating response activities, implementing the Reef Resilience Strategy, supporting the US Coral Reef Task Force and the All Islands Committee, and preparing grant proposals and reports while overseeing the CRCP-funded projects. (Grade M, Step 4) Fringe Benefits = \$34,181x 27.71% Retirement (\$9,472), DDI @ \$19.01\*26PP (\$495), Medical (\$1,321), Dental (\$224), Life (\$186), Medicare @ 1.45% (\$496) = \$12,194

## Travel

Task 1	220	Professional Development relevant conference, training, workshop, or course	Roundtrip airfare (\$2500), up to 6 days per diem @ \$250 per day (\$1500), ground transportation for up to 6 days @ \$35 per day (\$210), and registration (\$800)]	\$5,010	\$0
			Roundtrip Adelup to Merizo 50 miles x .54		
		Local Mileage Reimbursement for use	= \$27 x 3 trips per month x 12 months =		
Task 1	220	of vehicle	\$972	\$972	\$0
		AIC and USCRTF Meeting in	Airfare $$2900 \times 1 = $2900 \text{ to Washington},$		
Task 3	220	Washington, D.C.	D.C. for POC	\$2,900	\$0

	Per Diem \$250 x 3 days (inclusive of 1 travel day) = $750 \times 130\% = 975$ for Governor	\$975	\$0
	Per Diem $$250 \times 4$ days (inclusive of 1 travel day) = $$1000 \times 130\% = $1300$ for POC	\$1,300	\$0
	Ground Transportation for Governor (Car Rental) \$395; and ground transportation for POC (taxis) \$100	\$495	
AIC and USCRTF Meeting in one of the Jurisdiction	Airfare \$2600 x 2 = \$5200 to Jurisdiction for Governor and POC	\$5,200	\$0
	Per Diem $$250 \times 3$ days (inclusive of 1 travel day) = $$750 \times 130\%$ = $$975$ for Governor	\$975	\$0
	Per Diem \$250 x 6 days (inclusive of 1 travel day) = \$1500 x 130% = \$1950 for	<b>\$1.050</b>	Φ0.
	POC Ground Transportation for Governor (Car Rental) \$395; and ground transportation for	\$1,950	\$0
	POC (taxis) \$100	\$495	
	Subtotal	\$20,272	\$0

\$0

Subtotal

Budget Narrative: Task 1 Local Mileage Reimbursement is needed as the Watershed Coordinator uses her personal vehicle to travel to Manell Geus Watershed in Merizo to address and access bamboo removal and watershed (roundtrip from Adelup to Merizo 50 miles x .54 per mile (federal gsa mileage) =  $$27 \times 28$  trips = \$764). The Bureau has two government vehicle however the vehicle are not accessible as one needs major repairs, and the other is used for administrative runs and pricing.

Task 1 Travel budget for the Coral Reef Watershed Coordinator Professional Development relevant conference, training workshop or course. The estimated travel cost is as follows: Roundtrip airfare (\$2500), up to 6 days per diem @ \$250 per day (\$1500), ground transportation for up to 6 days @ \$35 per day (\$210), and registration (\$800)

Task 3 Travel budget for the Governor and the Coral Reef Point of Contact to attend the USCRTF Meetings. The budget includes airfare, per diem and ground transportation

## Equipment

		Subtotal	ΦU	
Budget !	Narrative	: There are no equipment identified under this category.		
Supplies	S			
		Field supplies: 1 dive float and flag, 1 GPS and 3 dry bags, 3 50m transect tapes, 3		
Task 2	240	1m quadrats, 5 light and temperature loggers, 1 water quality probe,	\$1,000	\$0
Task 2	250	Field supplies: 1 digital point and shoot camera with underwater housing	\$1,500	
		Miscellaneous grant administrative office supplies = \$500 (To include copier paper,		
		file folders, staples, paper clips, USB flash drive, post it notes, etc.)		
Task 2	240		\$500	\$0
		Supply costs (\$1,000) to support the Guardians of the Reef Training. The itemized		
		items are as follows: Miscellaneous outreach supplies to include 243 pcs x \$1.50 =		
		\$365 color butcher paper, 1 dozen x 20 pkg x $$5 = $100$ colored pipe cleaners pkg,		
		1 dozen x 10 x $$15 = $150$ color pencils,1 dozen x 10 x $$15 = $150$ color		
		markers, 25 pcs x $\$2.00 = \$50$ elementary scissors, 20 pcs x $\$3 = \$60$ scotch tape,		
		clear plastic storage bins to store small supply $4 \times $25 = $100$ for Guardian of the		
Task 7	240	Reef Training for Year 1.	\$1,000	\$0
		Subtotal	\$4,000	\$0
<b>D</b> 1	NT .*			

Budget Narrative: Task 2 Field supplies is necessary in order for the Reef Resilience Coordinator to conduct field work to collect and analyze data on the effects of acute impacts on Guam's overall coral reef health and response exercise.

Task 2 Miscellaneous supplies to be towards the administration of the grant.

Task 7 Supplies are necessary in order for the Guardian teachers and support team to conduct interactive learning activities during the Guardians of the Reef Training.

Contrac	tual	Training activity for the Guam Coral Reef Response Team (one per annum) = [ travel for up to two trainers @ \$2500 per person (\$5000), per diem for two trainers for up to 6 days @ \$246 (\$159 lodging and \$70 meals) per day for Guam (\$1476 x		
Task 2	230	2 = \$2952) and ground transportation (car rental) \$400]	\$8,352	\$0
Task 2	230	Coral Reef Response training venue for up to 3 days @ \$1200 per day (\$3600)	\$3,600	\$0
Task 2	230	Coral Reef Response printing and field supplies	\$400	\$0

			Outreach materials = \$1000 (Information	onal brochures, posters, booklets, etc. related		
			to the Guam Coral Reef Response Tear	n, the Guam Reef Resilience Strategy, and		
Task 2	230		community outreach programs)		\$1,000	\$0
Task 4			AIC Dues	\$24286 x 1	\$24,286	\$0
Task 5			Coral Reef Fellow <sup>1</sup>	\$10714 x 1	\$10,714	\$0
Task 6	280	111	Monitoring coordinator	Grade N, Step 3 \$23.3125 per hour x 2080 hours	\$48,490	\$0
1 ask 0	200	111	Womtoring Coordinator	Grade L, Step 3 \$19.2139 per hour x 2080	\$40,490	\$0
Task 6	280	111	Technical support specialist	hours	\$39,965	\$0
Task 6			2 Monitoring assistants	\$13,500 per annum x 2 (part time)	\$27,000	\$0
				44,015  x  .40  percent = 17,606 / 26  pay		
Task 6			Administrative support (Admin Asst)	period = \$677.15 ppd	\$17,606	\$0
Task 6	280	111	1 Reef flat program field personnel	\$4000 per annum x 1 (part time)	\$4,000	\$0
		113	Monitoring coordinator	\$48,490 x 27.41% Retirement \$13,291, retire RDI \$494, medicare \$703, life \$186,		
Task 6	280	113	Womtoring Coordinator	medical \$3773, dental \$239	\$18,687	\$0
					,	
		112	Technical support specialist	\$39,96579 x 27.41% Retirement \$10,954, retire RDI \$494, medicare \$579, life \$186,		
		113	reclinical support specialist	medical \$1321, dental \$224		
Task 6	280				\$13,760	\$0
Task 6	280	113	Monitoring assistants	\$5040 for social security 6.2% and medicare 1.145% x 2	\$10,080	\$0
1 ask 0	200			medicare 1.145/0 X 2	\$10,000	Ψ0
	,			\$44,015 x 27.41% = \$12065 Retirement,		
		113	Administrative support (Admin Asst)	Medicare \$638, Life \$186 = \$12,889 (\$12,889 x .40 = \$5156/26 ppd = \$198.29)		
Task 6	280			•	\$5,156	
m 1 c	200	113	Reef flat program field personnel	\$1440 for social security 6.2% and	<b>01.440</b>	
Task 6 Task 6	280		Field and office supplies	medicate 1.145% x 1	\$1,440	0.0
Task 6			Scuba equipment maintenance	\$478 \$900	\$478 \$900	\$0 \$0
Task 6			Scuba tank rental	\$1,400	\$1,400	\$0 \$0
			Boat rental (Long-term Monitoring			
Task 6	280 2		Program)	\$9,258.00	\$9,258	\$0
1 ask 0	200 2	230	_	\$9,236.00	\$9,236	φU
Task 6	280 7		Boat and truck rental (Reef Flat Monitoring Program)	\$1,780.00	\$1,780	\$0
1 ask 0	200 2				\$1,780	ΨU
				Simon Sanchez Traveling Ocean Fair and opet show to provide roundtrip transportation		
				ementary School (\$55 x 80 hours = \$4,400),		
				ide roundtrip transportation for the high		
				S, SHS to the 25 elementary schools \$55 per		
m 1.7	220			Nature Alliance fieldtrips \$55 per hour x 80	Φ1 C 700	Φ0
Task 7	230		hours $= \$4,400$		\$16,500	\$0
			Outreach and Education Items and Con	tractual Printing (\$12,294) such as		
				$150 \times \$7 = \$1050, XL\ 20 \times \$8 = \$160, 2XL\ 4$		
				loring Book printing (black and white pages,		
				x .12 = \$360), Pledge Cards (\$.095 x 3000 = 00 x .10 = \$10) and Guardians of the Reef		
				= \$2600; contractual services to support		
				le but not be limited to displays at public		
				n ups; outreach items for Guam's wildland		
Task 7	230		fire campaign (\$3777), and Eyes on the	e Reef training videos (\$4012)	\$12,294	\$0
			•	Parts A-D, Cost Principies 2 CFR SubPart E		
Task 8	230		and FAR 31.2		\$5,214.00	\$0.00
Task 9	230		RA salary, 12 months @ \$14.94/hr		\$17,330.00	
			RA fringe benefits @ 19% of salary		\$3,243.00	
			Community partner stipend @ \$8.25/hr	r * 10 hr/week	\$4,290.00	
			Boat rental (includes truck and boat cap	otain) @ \$250/day)	\$9,000.00	
			SCUBA tank rental @ \$6/tank *3 diver	rs/day	\$540.00	
			Nursery platform materials		\$5,372.00	
			• •		φ5,512.00	

Dive certification (physical exam and safety courses) \$1,000.00

Consumable supplies \$4,000.00

Administrative Support Chief Business Officer @ 59% of salary \$10,225.00

Subtotal \$337,360.00

\$0.00

#### **Budget Narrative**

Task 2 Contractual support is needed to implement a Coral Reef Response Exercise that will engage our local and federal partners in simulating and exercise on one of the following response to coral reef impacts such as coral bleaching events, coral disease outbreaks, invasive species, vessel groundings, oils spills, and outbreaks of nuisance species such as the crown of thorns. The contractual support will include venue, workshop materials, contractual services to bring experts to Guam to conduct the exercise on one of the coral reef impacts.

Task 2 Contractual Services for outreach, inreach and training materials for events to educate the community, to conduct coral reef response exercises on one of the following: nuisance species, vessel groundings, invasive species, and or coral disease outbreaks led by the Coral Fellow and to contract and expert to guide in the response exercise.

Task 4 AIC Dues is needed to provide support to the AIC office and Secretariat which serves to lead the coordination, development, communication and implementation of priorities established by the AIC

Task 5 The NOAA Coral Reef Management Fellowship Program provides the state and territorial coral reef management agencies with highly qualified candidates whose education and work experience meet each island's specific needs, while providing the individual fellows with professional experience in coastal and coral reef resources management.

Task 6 Long Term Monitoring. Please refer to the budget narrative.

Task 7 Contractual support is needed to provide transportation for the Traveling Ocean Fair, Marine Mania Puppet Show, the Guardian of the Reef and Guam Nature Alliance. Transportation provided by this grant ensures student participation and success. The funds from this project will provide transportation to training opportunities for students and transportation to schools for presentations. Further more, contractual support for the Guardians of the Reef Review and Evaluation that will allow for the exchange and dissemination of information from the Guardians and teachers of the program. The funds will be used to cover the entrance fee for the Guardians at "Underwater World" for  $110 \times $20 = $2200$ . Funding will ensure the Guardians have t-shirts to distinguish and identify them as Guardians of the Reef when they go out to the elementary school to present the Guardian of the Reef presentation. This outreach item is essential for the program as the Guardians are educating the 3rd grade students about the importance of Guam's reefs as stewards of Guam's coral ecosystem.

Funds will also be used for contractual services to support coral reef conservation efforts, reef resilience outreach and education efforts, and environmental education outreach efforts to include but not be limited to displays at public outreach venues; watershed hikes; clean ups; outreach items for Guam's wildland fire campaign; outreach items for Eyes on the Reef

Task 8 The funds will be used to pay for the Chief Planner, Coral Reef Resilience Coordinator and Administrative Services Officer online registration for the Management Federal Grants an Cooperative Agreements for Recipient, Uniform Administrative Requirements for Federal Grants: 2 CFR 200 Subparts A-D, and the Cost Principals for Federal Grants: 2 CFR Part 200 Subpart E and FAR 31.2.

Tasl 9 The funds will be used to expand, and properly care for, the coral nursery at the Cocos Lagoon. A dedicated Research Assistant will be necessary; this person will be a graduate student under mentorship of L. Raymundo. Salary and benefits are calculated at the standard University of Guam rate, set by the Research Corporation of UOG. We also request a small stipend for the community member selected to assist with the project, as the time commitment will be considerable and long-term. Boat and SCUBA tank rental prices are based on the current price charged by UOG, and we also request funding for needed dive physicals and safety courses for two project personnel, as required by UOG's AAUS-certified dive program. Finally, nursery and consumable materials include pvc, ropes, buoys, marine epoxy, cement nails, underwater paper and replacement temperature loggers.

Other			
	Subtotal	\$0	\$0
Budget Narrative: There is no cost identified in the Other Budget Category			
Indirect			
	Subtotal	\$0	\$0
Budget Narrative: There is no indirect cost identified in the Indirect Budget Category			
<sup>1</sup> Holdback from NOAA	Total	\$460,214	\$49,811

	Guam's Overall FY 2017 - 2018 CRCP Budget Summary Year 2						
		Category	Computation	Federal Funds	Matching Funds		
Personn	el						
		Coral Reef Watershed Coordinator	Grade M, Step 3 \$21.11 x 2080 hours x				
Task 1	111	Salary	100% x 1 year	\$43,910	\$0		
			Grade M, Step 2 \$20.34 x 2080 hours x				
Task 2	111	Reef Resilience Coordinator	100% x 1 year	\$42,307	\$0		
			\$72,842 x 35% of time or 28 hours =				
Task 2	111	Chief Planner	\$25,495	\$0	\$25,495		
			$37,914 \times 35\%$ of time or 28 hours =				
Task 7	111	Planner II	\$13,270	\$0	\$13,270		
			Subtotal	\$86,217	\$38,765		

Budget Narrative: Task 1 The Coral Reef Watershed Coordinator is essential to the program and a need exist to continue to have a staff to coordinate and address restoration efforts and implementation of restoration projects in Guam watersheds. The watershed coordinator will work with business partners, village communities, etc. to relay information, provide technical assistance and facilitate training sessions for Best Management Practices (BMPs) and watershed management tools as well as to work with specific community projects from the Conservation Action Plan for watersheds, such as reforestation, removal of invasive species, and creation of rain gardens, among others in collaboration with Guam's State Historic Preservation Officer. The watershed coordinator will collaborate with WERI on the recommendations for watershed management priorities in Geus to help address issues with sedimentation on land and in near-shore communities.

Task 2 The Reef Resilience Coordinator is essential to the program as a need exist to have a staff to coordinate the Coral Reef Response Team and facilitating response activities, implementing the Reef Resilience Strategy, supporting the US Coral Reef Task Force and the All Islands Committee, and preparing grant proposals and reports while overseeing the CRCP-funded projects.

Task 1	113	Coral Reef Watershed Coordinator Fringe Benefits	(Grade M, Step 3) Coral Reef Watershed Coordinator (Biologist II) Fringe Benefits \$43,910 x 27.71% Retirement (\$12,167), Medicare (\$637), medical (\$1321), dental (\$224), Life (\$186), DDI (\$495) x 100% = \$15,029	\$15,029	\$0
			(Grade M, Step 2) Fringe Benefits = \$14,562 [Retirement @ 27.71% (\$11,723), DDI @ \$19.01*26PP (\$495), Medical		
		Coral Reef Resilience Coordinator	(\$1,321), Dental (\$224), Life (\$186),		
Task 2	113	Fringe Benefits	Medicare @ 1.45% (\$613)]	\$14,562	\$0
			\$22,972 x 35% of time or 28 hours =		
Task 2	113	Chief Planner Fringe Benefits	\$8,040	\$0	\$8,040
			\$13,282 x 35% of time or 28 hours =		
Task 7	113	Planner II	\$4649	\$0	\$4,649
			Subtotal	\$29,591	\$12,689

Budget Narrative: Task 1 The Coral Reef Watershed Coordinator is essential to the program and will be responsible for the coordination and leadership of addressing restoration efforts and implementation of restoration projects in Guam watersheds. (Grade M, Step 5) Fringe Benefits \$47,301 x 27.71% Retirement (\$13,107), Medicare (\$686) medical (\$1321), dental (\$224), Life (\$186), DDI (\$495) x 100% = \$16,019

Task 2 The Reef Resilience Coordinator is essential to the program and will be responsible for coordinating the Coral Reef Response Team and facilitating response activities, implementing the Reef Resilience Strategy, supporting the US Coral Reef Task Force and the All Islands Committee, and preparing grant proposals and reports while overseeing the CRCP-funded projects. (Grade M, Step 5) Fringe Benefits \$47,301 @ 27.71% Retirement (\$13,107), Medicare (\$686) medical (\$1321), dental (\$224), Life (\$186), DDI (\$495) x 100% = \$16,019

#### Travel

			Roundtrip airfare (\$2500), up to 6 days per		
		Professional Development relevant	diem @ \$250 per day (\$1500), ground		
		conference, training, workshop, or	transportation for up to 6 days @ \$35 per		
Task 2	220	course	day (\$210), and registration (\$800)]	\$5,010	\$0

Task 1	220	Local Mileage Reimbursement for use of vehicle AIC and USCRTF Meeting in	\$972 Airfare \$2900 x 1 = \$2900 to Washington,	\$972	\$0
Task 3	220	Washington, D.C.	D.C. for POC	\$2,900	\$0
			Per Diem \$250 x 3 days (inclusive of 1 travel day) = \$750 x 130% = \$975 for Governor	\$975	\$0
			Per Diem \$250 x 4 days (inclusive of 1 travel day) = \$1000 x 130% = \$1300 for POC	\$1,300	\$0
			Ground Transportation for Governor (Car Rental) \$395; and ground transportation for POC (taxis) \$100	\$495	\$0
		AIC and USCRTF Meeting in one of the Jurisdiction	Airfare \$2600 x 2 = \$5200 to Jurisdiction for Governor and POC	\$5,200	\$0
			Per Diem \$250 x 3 days (inclusive of 1 travel day) = \$750 x 130% = \$975 for Governor	\$975	\$0
			Per Diem \$250 x 6 days (inclusive of 1 travel day) = \$1500 x 130% = \$1950 for POC	¢1.050	¢Λ
			Ground Transportation for Governor (Car Rental) \$395; and ground transportation	\$1,950	\$0
			for POC (taxis) \$63	\$458	
			Subtotal	\$20,235	\$0

Budget Narrative: Task 1 Local Mileage Reimbursement is needed as the Watershed Coordinator will be uses his or her own personal vehicle to travel to Manell Geus Watershed in Merizo to address and access bamboo removal and watershed (roundtrip from Adelup to Merizo 50 miles x.54 per mile (federal gsa mileage) = \$27 x 28 trips = \$764). The Bureau has two government vehicle however the vehicle are not accessible as one needs major repairs, and the other is used for administrative runs and pricing.

Task 2 Travel budget for the Reef Resilience Coordinator Professional Development relevant conference, training workshop or course. The estimated travel cost is as follows: Roundtrip airfare (\$2500), up to 6 days per diem @ \$250 per day (\$1500), ground transportation for up to 6 days @ \$35 per day (\$210), and registration (\$800)

Task 3 Travel budget for the Governor and the Coral Reef Point of Contact to attend the USCRTF Meetings. The budget includes airfare and Perdiem.

Equipm	Equipment					
				Subtotal	\$0	\$0
Budget J	Budget Justification: There are no equipment identified in the Equipment Budget Category.					
Supplies	Supplies					
				Subtotal	\$0	\$0
Budget J	Budget Justification: There is no supplies identified in the Supplies Budget Category.					
Contrac	tual					
		Training activity for the Guam Coral Reef Response Team (one per annum) = [				
		1	o per person (\$5000), per diem for two			
			ng and \$70 meals) per day for Guam (\$	\$1476 x		
Task 2	230	2 = \$2952) and ground transportatio	n (car rental) \$400]		8,352	\$0
Task 2	230	Coral Reef Response training venue	for up to 3 days @ \$1200 per day (\$36	500)	3,600	\$0
Task 2	230	Corel Reef Response printing and field supplies			400	\$0
	230	AIC Dues	\$24296 1			
Task 4		AIC Dues	\$24286 x 1		24,286	\$0
Task 5		Coral Reef Fellow <sup>1</sup>	\$10714 x 1		10,714	\$0

Task 6	290 11	1 Monitoring coordinator	Grade N, Step 4 \$24.1961 per hour x 2080 hours	50,328	\$0
1 ask 0	200 11	1 Wolltoring Coordinator	Grade L, Step 4 \$19.9418 per hour x 2080	41.470	ΨU
Task 6	280 11	1 Technical support specialist	hours	41,479	\$0
Task 6	280 11	1 2 Monitoring assistants	\$13,500 per annum x 2 (part time)	27,000	\$0
Task 6	280 11	1 Administrative support (Admin Asst)	\$45,411 x .40 percent = \$18,164 / 26 pay period = \$698.63 ppd	18,164	\$0
Task 6		1 1 Reef flat program field personnel	\$4000 per annum x 1 (part time)	4,000	\$0
			\$50,328 x 27.41% Retirement \$13,795,		
m 1 c		3 Monitoring coordinator	retire RDI \$494, medicare 730, life \$186,	19,217	40
Task 6	280		medical \$3773, dental \$239		\$0
	11	3 Technical support specialist	\$41,479 x 27.41% Retirement \$11,369, retire RDI \$494, medicare 601, life \$186,	14,197	
Task 6	280		medical \$1321, dental \$224	,	\$0
	11	3 2 Monitoring assistants	\$5040 for social security 6.2% and	10,080	
Task 6	280	3 2 Womtoring assistants	medicare 1.145% x 2	10,000	\$0
			\$45,411 x 27.41% = \$12447 Retirement,		
	11	3 Administrative support (Admin Asst)	Medicare \$638, Life \$186 = \$13,292	5,308	
Task 6	280		(\$13,292  x  .40 = \$5317/26  ppd = \$204.50)		
	11	3 Reef flat program field personnel	\$1440 for social security 6.2% and	1,440	
Task 6	280		medicate 1.145% x 1		¢0
Task 6 Task 6		Field and office supplies     Scuba equipment maintenance		340 900	\$0 \$0
Task 6		0 Scuba tank rental		1,400	\$0 \$0
		Boat rental (Long-term Monitoring			
Task 6	280 23	D\	\$4,367.00	4,367	\$0
Tusk o		Boat and truck rental (Reef Flat	ψ-,507.00	1 700	ΨΟ
Task 6	280 23	Monitoring Program)	\$1,780.00	1,780	\$0
		(230) Transportation (\$12,100) for the	Simon Sanchez Traveling Ocean Fair and		
		George Washington Marine Mania Pu	8		
		transportation for the high school to pr	resent at the Elementary School and Guam		
		* `	ours = \$4400),Guardians of the Reef Program		
		to provide roundtrip transportation for SSHS, SHS to the 25 elementary school	the high school Guardians from JFK, GW,		
Task 7	230	33113, 3113 to the 23 elementary school	ois \$55 per nour x 140 nours = \$7,700	12,100	\$0
		(20)	10		
			nd Contractual Printing (\$4505) such as 150 x \$7 = \$1050, XL 20 x \$8 = \$160, 2XL		
			Coloring Book printing (black and white		
		**	(3000  x .12 = \$360), Pledge Cards (\$.095 x		
		**	urvey $(100 \times .10 = $10)$ and Guardians of		
Task 7	230	the Reef Review and Evaluation (130	x \$20.00 = \$2600	4,505	\$0
1 4011 /	-200		Subtotal	263,957	0

## Budget Justification:

Task 2 Contractual support is needed to implement a Coral Reef Response Exercise that will engage our local and federal partners in simulating and exercise on one of the following response to coral reef impacts such as coral bleaching events, coral disease outbreaks, invasive species, vessel groundings, oils spills, and outbreaks of nuisance species such as the crown of thorns. The contractual support will include venue, workshop materials, contractual services to bring experts to Guam to conduct the exercise on one of the coral reef impacts.

Task 4 AIC Dues is needed to provide support to the AIC office and Secretariat which serves to lead the coordination, development, communication and implementation of priorities established by the AIC

Task 5 The NOAA Coral Reef Management Fellowship Program provides the state and territorial coral reef management agencies with highly qualified candidates whose education and work experience meet each island's specific needs, while providing the individual fellows with professional experience in coastal and coral reef resources management.

Task 6 Long Term Monitoring. Please refer to the budget narrative.

Task 7 Contractual support is needed to provide transportation for the Traveling Ocean Fair, Marine Mania Puppet Show, the Guardian of the Reef and Guam Nature Alliance. Transportation provided by this grant ensures student participation and success. The funds from this project will provide transportation to training opportunities for students and transportation to schools for presentations. Further more, contractual support for the Guardians of the Reef Review and Evaluation that will allow for the exchange and dissemination of information from the Guardians and teachers of the program. The funds will be used to print the Guardian of the Reef Coloring Book, Pledge Cards, Guardian of the Reef survey for the Guardian of the Reef presentation at the school. Funding will be used to cover the entrance fee for the Guardians at "Underwater World" for 130 x \$20 = \$2600. Funding will ensure the Guardians have t-shirts to distinguish and identify them as Guardians of the Reef when they go out to the elementary school to present the Guardian of the Reef presentation. This outreach item is essential for the program as the Guardians are educating the 3rd grade students about the importance of Guam's reefs as stewards of Guam's coral ecosystem.

	Other
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	Subtotal	\$0	\$0
Budget Justification: There is no cost identified in the Other Budget Category			
Indirect			
	Subtotal	\$0	\$0
Budget Justification: There is no indirect cost identified in the Indirect Budget Category			
1 Holdback from NOAA	Total	\$400,000	\$51,454

# FY 2017 – 2018 Coral Reef Conservation Program Budget Narrative

**Task 1. Coral Reef Watershed Coordinator** 

Budget and Justification

Coral Reef Watershed Coordinator Budget Summary-Year 1						
Category	Federal funds	Matching Funds	Total			
Personnel	\$42,307.00	\$0.00	\$42,307.00			
	(111) Coral Reef Watershed Coordinator (Biologist II Grade M, Step 2) @ \$20.34 x 2080					
hours x 100%						
Fringe	\$14,562.00	\$0.00	\$14,562.00			
	Medicare (\$613) medic	ologist II) Fringe Benefits \$4 al (\$1321), dental (\$224), Lit				
Travel	\$5,010.00	0	\$5,010.00			
training, workshop, or	course to include round	per grant cycle) = \$5,010 [Redtrip airfare (\$2500), up to 6 for up to 6 days @ \$35 per da	days per diem @			
Travel (Local Mileage Reimbursement	\$972.00	\$0.00	\$972.00			
Merizo to address and Merizo 50 miles x .54 \$972)	(220) Local Mileage Reimbursement for use of personel vehicle to Manell Geus Watershed in Merizo to address and access bamboo removal and watershed (roundtrip from Adelup to Merizo 50 miles x .54 per mile (federal gsa mileage) = \$27 x 3 trips per month x 12 months = \$972)					
TOTALS	\$62,851.00	\$0.00	\$62,851.00			
		inator Budget Summary-Y				
Category	Federal funds	Matching Funds	Total			
Personnel	\$43,910.00	\$0.00	\$43,910.00			
(111) Coral Reef Watershed Coordinator (Biologist II Grade M Step 3) @ \$21.11 x 2080 hours x 100%						
Fringe	\$15,029.00	\$0.00	\$15,029.00			
(113) Coral Reef Watershed Coordinator (Biologist II) Fringe Benefits \$43,910 x 27.71% Retirement (\$12,167), Medicare (\$637), medical (\$1321), dental (\$224), Life (\$186), DDI (\$495) x 100% = \$15,029						
Travel (Local Mileage Reimbursement)	\$972.00	\$0.00	\$972.00			

(220) Local Mileage Reimbursement for use of personnel vehicle to Manell Geus Watershed in Merizo to address and access bamboo removal and watershed (roundtrip from Adelup to Merizo 50 miles x .54 per mile (federal gsa mileage) = \$27 x 3 trips per month x 12 months = \$972)

TOTALS	\$59,911.00	\$0.00	\$59,911.00

#### Personnel

Anna Simeon, Biologist II, is the grant funded full time watershed coordinator hired on February 2, 2015. Her salary is \$42,307 for FY2017 and \$43,910 in FY2018. This salary was determined by the Government of Guam Competitive Wage Act for a Biologist II position. The hourly rate in FY2017 is \$20.34 x 2080 hours x 100% and the hourly rate in FY2018 is \$21.11 x 2080 x 100% in FY 2018. She will continue to lead the coordination and address restoration efforts and implementation of restoration projects in Guam watersheds in collaboration with Department of Agriculture and other natural resource agencies. The watershed coordinator will be responsible for the coordination and leadership of addressing restoration efforts and implementation of restoration projects in Guam watersheds. The watershed coordinator will also work with business partners, village communities, etc. to relay information, provide technical assistance and facilitate training sessions for Best Management Practices (BMPs) and watershed management tools. The watershed coordinator will work with specific community projects from the Conservation Action Plan for watersheds, such as reforestation and removal of invasive species, among others in collaboration with Guam's State Historic Preservation Officer. The watershed coordinator will collaborate with WERI on the recommendations for watershed management priorities in Geus to help address issues with sedimentation on land and in near-shore communities.

# Fringe Benefits

The current grant funded watershed coordinator, Ms. Anna Simeon, detail fringe benefit cost for a single employee under classification 1 is as follow: Coral Reef Watershed Coordinator (Biologist II) Fringe Benefits \$14,562 (\$42,307 x 27.71% Retirement (\$11,723), Medicare (\$613) medical (\$1321), dental (\$224), Life (\$186), DDI (\$495) x 100% = \$14,562) for Year 1; and Coral Reef Watershed Coordinator (Biologist II) Fringe Benefits \$15,616 (\$43,910 x 27.71% Retirement (\$12,629), Medicare (\$661) medical (\$1321), dental (\$224), Life (\$186), DDI (\$495) x 100% = \$15,616) for Year 2

#### Travel

Professional development activity (Year 1) = \$5,010 [Relevant conference, training, workshop, or course to include roundtrip airfare (\$2500), up to 6 days per diem @ \$250 per day (\$1500), ground transportation for up to 6 days @ \$35 per day (\$210), and registration (\$800)]

## Travel (Local Mileage Reimbursement)

Local Mileage Reimbursement \$972 in Year 1 and Year 2 for use of personnel vehicle to travel to Manell Geus Watershed in Merizo to address and access bamboo removal and watershed (roundtrip from Adelup to Merizo 50 miles x . 54 = \$27 x 3 trips a per month x 12 months = \$972).

# **Task 2. Coral Reef Resilience Coordinator**

Budget and Justification

Reef Resilience Coordinator Budget Summary – Year 1					
Category Federal funds Matching funds Total					
Personnel	\$30,572	\$24,564	\$55,136		
(111) Salary for Reef Resil 2018 (9 months) = \$30,572		rade M, Step 1) for Januar x 75%)	y 2018 through September		
	f this cooperative agree	eon Guerrero) will be directed the directed temperature (Establishment, AA	ctly involved in the R review and action, MOU,		
Fringe	\$11,141	\$7,820	\$18,961		
(113) Fringe benefits for Reef Resilience Coordinator (Grade M, Step 1) for January 2018 through September 2018 (9 months) = \$11,141 [Retirement @ 27.71% (\$8,472), DDI @ \$19.01*26PP (\$495), Medical (\$1,321), Dental (\$224), Life (\$186), Medicare @ 1.45% (\$443)]  35% or 28 hours of the Chief Planner (Lola E. Leon Guerrero) will be directly involved in the administrative oversight of this cooperative agreement (Establishment, AAR review and action, MOU, reprogramming) \$22,343 x 35% = \$7,820					
Supplies	\$3,000	\$0	\$3,000		
(240) Field supplies = \$1,000 (1 dive/snorkel float and flag, 1 GPS and 3 dry bags, 3 50m transect tapes, 3 1m quadrats, 5 light and temperature loggers, 1 water quality probe) for documenting acute impacts to reefs and reef flats (e.g. vessel groundings, coral bleaching, etc.)					
documenting acute impacts	s to reefs and reef flat administrative office				
Contractual	\$13,352	\$0	\$13,352		
(230) Outreach materials = \$1000 (Informational brochures, posters, booklets, etc. related to the Guam Coral Reef Response Team, the Guam Reef Resilience Strategy, and community outreach programs)  (230) the Guam Coral Reef Response Team (one per annum) \$8352 = [ travel for up to two trainers @ \$2500 per person (\$5000), per diem for two trainers for up to 6 days @ \$246 (\$159 lodging and \$70 meals) per day for Guam (\$1476 x 2 = \$2952) and ground transportation (car rental) \$400]  (230) Coral Reef Response training venue for up to 3 days @ \$1,200 per day (\$3,600);  (230) Coral Reef Response printing and field supplies (\$400)]					
TOTALS	\$58,065	\$32,384	\$90,449		

Reef Resilience Coordinator Budget Summary – Year 2					
Category Federal funds Matching funds Total					
Personnel	\$42,307	\$25,495	\$67,802		
Salary for Reef Resilience Coordinator (Grade M, Step 2) for October 2018 through September 2019 (12 months) = \$42,307					

Reef	Reef Resilience Coordinator Budget Summary – Year 2					
35% or 28 hours of the Chief Planner (Lola E. Leon Guerrero) will be directly involved in the administrative oversight of this cooperative agreement (Establishment, AAR review and action, MOU, reprogramming) \$72,842 x 35% = \$25,495						
Fringe	\$14,562	\$8,040	\$22,602			
September 2019 (12 month	Fringe benefits for Reef Resilience Coordinator (Grade M, Step 2) for October 2018 through September 2019 (12 months) = \$14,562 [Retirement @ 27.71% (\$11,723), DDI @ \$19.01*26PP (\$495), Medical (\$1,321), Dental (\$224), Life (\$186), Medicare @ 1.45% (\$613)]					
35% or 28 hours of the Chief Planner (Lola E. Leon Guerrero) will be directly involved in the administrative oversight of this cooperative agreement (Establishment, AAR review and action, MOU, reprogramming) \$22,972 x 35% = \$8,040						
Contractual	\$12,352	\$0	\$12,352			
(230) the Guam Coral Reef Response Team (one per annum) = [ travel for up to two trainers @ \$2500 per person (\$5000), per diem for two trainers for up to 6 days @ \$246 (\$159 lodging and \$70 meals) per day for Guam (\$1476 x 2 = \$2952) and ground transportation (car rental) \$400]						
(230) Coral Reef Response training venue for up to 3 days @ \$1,200 per day (\$3,600); (230) Coral Reef Response printing and field supplies (\$400)]						
Travel \$5,010 \$0 \$5,010						
Professional development activity (one per grant cycle) = \$5010 [Relevant conference, training, workshop, or course, to include roundtrip airfare (\$2500), up to 6 days per diem @ \$250 per day (\$1500), transportation for up to 6 days@\$35 (\$210), and registration (\$800)]						
TOTALS	\$74,231	\$33,535	\$107,766			

## Personnel

This is a new position that will be responsible for coordinating the Coral Reef Response Team and facilitating response activities, implementing the Reef Resilience Strategy, supporting the US Coral Reef Task Force and the All Islands Committee, and preparing grant proposals and reports while overseeing the CRCP-funded projects. The Bureau of Statistics and Plans will hire the Coral Reef Resilience Coordinator as a Biologist II at Grade M, Step 1 to begin working January 1, 2018. The salary is \$30,572 for FY2017 and \$42,307 in FY2018. This salary was determined by the Government of Guam Competitive Wage Act for a Biologist II position. The hourly rate in FY2017 is \$19.60 x 1560 hours x 100% and the hourly rate in FY2018 is \$20.34 x 2080 x 100%.

# Fringe Benefits

BSP will hire the Coral Reef Resilience Coordinator as a Biologist II at Grade M, Step 1. The anticipated fringe benefit cost is for a single employee under classification 1 is as follows: Fringe benefits for Reef Resilience Coordinator (Grade M, Step 1) for January 2018 through September 2018 (9 months) = \$11,141 [Retirement @ 27.71% (\$8,472), DDI @ \$19.01\*26PP (\$495), Medical (\$1,321), Dental (\$224), Life (\$186), Medicare @ 1.45% (\$443)] in Year 1; and Fringe benefits for Reef Resilience Coordinator (Grade M, Step 2) for October 2018 through September 2019 (12 months) = \$14,562 [Retirement @ 27.71% (\$11,723), DDI @ \$19.01\*26PP (\$495), Medical (\$1,321), Dental (\$224), Life (\$186), Medicare @ 1.45% (\$613)] in Year 2.

Personnel and Fringe Benefits (In kind Match)

The locally funded Chief Planner will provide support to the Coral Reef Resilience Coordinator in the implementation of FY 17-18 CRCP Cooperative Agreement. The Chief Planner will guide the Coral Reef Resilience Coordinator in the preparation of the quarterly progress reports, reprogramming request, establishment of the Grant Award, review and compliance with the SACS, and implementation of the programmatic agreement. Thirty five percent of the Chief Planner's time will be involved in the coral reef resilience coordinator task.

# Supplies

The following field supplies are necessary for documenting acute impacts to reefs and reef flats (e.g. vessel groundings, coral bleaching, etc.): 1 dive/snorkel float and flag, 1 GPS and 3 dry bags, 3 50m transect tapes, 3 1m quadrats, 5 light and temperature loggers, 1 water quality probe (\$1000), 1 digital point and shoot camera with underwater housing (\$1500)).

Miscellaneous grant administrative office supplies for the general administration of the grant as there are minimal local funds to provide direct support. Supplies include copier paper, file folders, staples, paper clips, USB flash drive, post it notes, etc. (\$500)

#### Contractual

BSP will contract services to conduct a training activity for the Guam Coral Reef Response Team (one per annum) \$8352. The contractual services will include the following: travel for up to two trainers @ \$2500 per person (\$5000), per diem for two trainers for up to 6 days @ \$246 (\$159 lodging and \$70 meals) per day for Guam ( $$1476 \times 2 = $2952$ ) and ground transportation (car rental) \$400] in Year 1 and Year 2. In addition, funds will be used for the Coral Reef Response training venue for up to 3 days @ \$1,200 per day (\$3,600) and Coral Reef Response printing and field supplies (\$400)] in Year 1 and Year 2.

Outreach materials = \$1000 in Year 1 for informational brochures, posters, booklets, etc. related to the Guam Coral Reef Response Team, the Guam Reef Resilience Strategy, and community outreach programs.

#### Travel

Professional development activity (Year 2) = \$5010 [Relevant conference, training, workshop, or course, to include roundtrip airfare (\$2500), up to 6 days per diem @ \$250 per day (\$1500), transportation for up to 6 days@\$35 (\$210), and registration (\$800)].

Budget and Justification

Task 3. Travel

Travel Budget Summary-Year 1					
Category	Federal funds	Matching Funds	Total		
Travel	\$14,290.00	\$0.00	\$14,290.00		
TOTALS	\$14,290.00	\$0.00	\$14,290.00		
	Travel Budget Summary-Year 2				
Category	Federal funds	Matching Funds	Total		
Travel	\$14,253.00	\$0.00	\$14,253.00		

TOTALS	\$14,253.00	\$0.00	\$14,253.00

## USCRTF and AIC Meeting

Travel funds for the Coral Reef Point of Contact, and the Governor and or the Director of the Agency that Administer the CRCP to attend the All Island Committee Meeting and US Coral Reef Task Force Meetings in Washington DC and the local jurisdiction.

# Washington D.C. Meeting

Airfare  $$2900 \times 1 = $2900 \text{ to Washington, D.C. for POC}$ 

Per Diem  $$250 \times 3$  days (inclusive of 1 travel day) =  $$750 \times 130\%$  = \$975 for Governor

Per Diem \$250 x 4 days (inclusive of 1 travel day) = \$1000 x 130% = \$1300 for POC

Ground Transportation for Governor (Car Rental) \$395; and ground transportation for POC (taxis) \$100

# Jurisdiction Meeting

Airfare  $$2600 \times 2 = $5200 \text{ to Jurisdiction for Governor and POC}$ 

Per Diem  $$250 \times 3$  days (inclusive of 1 travel day) =  $$750 \times 130\%$  = \$975 for Governor

Per Diem \$250 x 6 days (inclusive of 1 travel day) = \$1500 x 130% = \$1950 for POC

Ground Transportation for Governor (Car Rental) \$395; and ground transportation for POC (taxis) \$63

Follow government of Guam Travel Policy

## Task 4. All-island Committee (AIC) Dues

## Budget and Justification

AIC Dues Budget Summary-Year 1					
Category	Federal funds	Matching Funds	Total		
Contractual	\$24,286.00	\$0.00	\$24,286.00		
TOTALS	\$24,286.00	\$0.00	\$24,286.00		

Travel Budget Summary-Year 2				
Category Federal funds Matching Funds Total				
Contractual	\$24,286.00	\$0.00	\$24,286.00	
TOTALS	\$24,286.00	\$0.00	\$24,286.00	

The National Oceanic Atmospheric Administration is authorized to hold \$24,286 of the grant for Guam's All Island Committee dues for Year 1 and Year 2.

Task 5. Coral Reef Fellowship Program

Budget and Justification

Coral Reef Fellows Budget Summary-Year 1						
Category	Federal funds	Matching Funds	Total			
Contractual	\$10,714.00	\$0.00	\$10,714.00			
TOTALS	\$10,714.00	0,714.00 \$0.00 \$1				
Coral Ree	Coral Reef Fellows Budget Summary-Year 2					
Category	Federal funds	Matching Funds	Total			
Contractual	\$10,714.00	\$0.00	\$10,714.00			
TOTALS	\$10,714.00	\$0.00	\$10,714.00			

The National Oceanic Atmospheric Administration is authorized to hold \$10,714 of the grant for the Coral Reef Fellows for Year 1 and Year 2.

The NOAA Coral Reef Management Fellowship Program provides the state and territorial coral reef management agencies with highly qualified candidates whose education and work experience meet each island's specific needs, while providing the individual fellows with professional experience in coastal and coral reef resources management.

Each jurisdiction develops a separate Statement of Work which contains project descriptions, goals and objectives, minimum and desired qualifications, and salary, among other information. The Statements of Work uniquely reflect each jurisdiction's particular needs, complementing other ongoing local projects and management activities. Successful candidates will meet these needs.

Task 6: Comprehensive Long-Term Monitoring at Permanent Sites in Guam

Budget and Justification

Personn	el	FY2018	FY2019
111	Monitoring coordinator	\$48,490.00	\$50,328.00
111	Technical support specialist	\$39,965.00	\$41,479.00
111	Monitoring assistants	\$27,000.00	\$27,000.00
111	Administrative support (Admin Asst)	\$17,606.00	\$18,164.00
111	Reef flat program field personnel	\$4,000.00	\$4,000.00
Fringe B	Benefits		
113	Monitoring coordinator	\$18,687.00	\$19,217.00
113	Technical support specialist	\$13,760.00	\$14,197.00
113	Monitoring assistants	\$10,080.00	\$10,080.00
113	Administrative support (Admin Asst)	\$5,156.00	\$5,308.00
113	Reef flat program field personnel	\$1,440.00	\$1,440.00
Supplies			
240	Field and office supplies	\$478.00	\$340.00
230	Scuba equipment maintenance	\$900.00	\$900.00

230	Scuba tank rental	\$1,400.00	\$1,400.00
Contrac	tual		
230	Boat rental (Long-term Monitoring Program)	\$9,258.00	\$4,367.00
230	Boat and truck rental (Reef Flat Monitoring Program)	\$1,780.00	\$1,780.00
	TOTAL	\$200,000.00	\$200,000.00

## **Budget** overview

Beginning in July 2016 the Monitoring Coordinator decreased the number of hours he works on the long-term monitoring project to 41 hours per pay period (51% of his total hours), and with the funds made available with this arrangement a third monitoring student was hired to assist the Technical Support Specialist and the other two monitoring assistants with field work and other responsibilities. However, it has recently come to the attention of the Monitoring Coordinator that the current Technical Support Specialist is intending to resign in December 2016, which would require the hiring and training of a new person. This individual must be able to expertly execute either the coral quadrat or reef fish surveys, and to take on some of the responsibilities of the Monitoring Coordinator, in order for the reduced hour arrangement for the Monitoring Coordinator to work without compromising the quality of the monitoring program or of the EPSCoR-funded outcomes for which he is responsible. It is due to the uncertainty regarding the success of this arrangement that this grant proposal includes a request for funding to cover the full salary and benefits of the Monitoring Coordinator for FY2018 and FY2019.

## Personnel

The coordinator position is a full time position with an expected salary of \$48,490.00 for FY2018 and \$50,328.00 for FY2019. The technical support position is also a full time position, with an expected salary of \$39,965.00 for FY2018 and \$41,479.00 for FY2019. Beginning in FY2017 the Monitoring Coordinator will be classified as a Research Associate III, at Grade N Step 3, while the new Technical Support Specialist, depending on their qualifications, could be slotted as high as Grade L Step 3 at the time of their hire in early FY2017. The salaries proposed here account for increments required for UOG employees, as determined using the University of Guam's General Pay Plan, to which the Monitoring Coordinator and Technical Support Specialist positions were transitioned during FY2016.

Because the Monitoring Coordinator will transition to 100% funding through Monitoring Program funds, the number of part-time (20 hrs/wk) monitoring assistants will be reduced from three to two. The monitoring assistant positions are currently filled by UOGML graduate students, but may also be filled by other qualified persons in the event that qualified graduate students are not available. The salary for field personnel was calculated using a \$14.91/hr rate for UOGML graduate students. While a full year's work by the monitoring assistants would amount to an annual salary of \$15,506.40 per monitoring assistant for a total of \$31,012.80/yr, an amount of \$27,000 was requested to account for short periods during which fewer than two monitoring assistants are employed and periods when the assistants are not able to work the full 20 hours per week. An additional \$4,000/year is requested to fund the part-time employment of one graduate student to work with Dr. Raymundo on the reef flat monitoring program.

The administrative assistant is responsible for providing direct administrative and office support services for the Long Term Monitoring and Reef Flat Monitoring project. Responsibilities include prepare and submit the semiannual financial reports for submission to the Bureau, prepare and submit the monthly and or quarterly invoices for reimbursement along with the corresponding documentation to the Bureau upon the department head signature and general accountant supervisor signature, assists in the preparation of the grant funded budget, prepare and submit the recruitment actions for the grant funded positions to include preparation of job position description to UOG Human Resource Division, consults and advises

grant funded positions on personnel matters, maintain and track the grant funded position time and effort sheets, maintains the project file, maintains the project budget by object classification and monitors the funds allocated to each object class to ensure the PI is aware of the balance on the project, process requisitions to include obtaining three price quotations, prepares Request for Information, and reviews and process vendor invoices for payment. During an 80 hour week, the Administrative Assistant allocates 32 hours or 40% of her time per pay period providing direct administrative and office support to the project. Estimated budget is as follows: Annual Salary per annual \$44,015 x .40 percent = \$17,606 / 26 pay period = \$677.15 ppd in FY 2018 and Annual Salary per annual \$45,411 x .40 percent = \$18,164 / 26 pay period = \$698.63 ppd in FY2019.

# Fringe Benefits

The detail Fringe benefits for the Monitoring Coordinator, Technical Support, and Administrative Assistant in FY2018 and FY2019 is depicted in the table below.

Please be apprised the administrative assistant fringe benefits is prorated. During an 80 hour week, the Administrative Assistant allocates 32 hours or 40% of her time per pay period providing direct administrative and office support to the project. Estimated budget is as follows for Year 1: Annual Fringe Benefit per annual \$12,889 ( $$12,889 \times .40 = $5156/26 \text{ ppd} = $198.31$ ). Estimated budget is as follows for Year 2: Annual Fringe Benefit per annual \$13,292 ( $$13,292 \times .40 = $5317/26 \text{ ppd} = $204.50$ ).

Long Term Monitoring Position	Annual Salary	Retire- ment 27.41%	Retire - RDI 19.01* 26ppd	medicare 1.45%	life - 7.17 x 26ppd)	medical	dental	Total Fringe	40% or 32 hours
Monitoring Coordinator Year 1	\$48,490	\$13,291	\$494	\$703	\$186	\$3,773	\$239	\$18,687	
Monitoring Coordinator Year 2	\$50,328	\$13,795	\$494	\$730	\$186	\$3,773	\$239	\$19,217	
Technical Support Specialist Year 1	\$39,965	\$10,954	\$494	\$579	\$186	\$1,321	\$224	\$13,760	
Technical Support Specialist Year 2	\$41,479	\$11,369	\$494	\$601	\$186	\$1,321	\$224	\$14,197	
Adm Asst Year 1	\$44,015	\$12,065	\$0	\$638	\$186	\$0	\$0	\$12,889	\$5,156
Adm Asst Year 2	\$45,411	\$12,447	\$0	\$658	\$186	\$0	\$0	\$13,292	\$5,317

## **Supplies**

An estimated \$1,400.00/yr is required for the rental of scuba tanks for the long-term monitoring program. No funding for scuba tank rental is being requested for use in the reef flat monitoring program. An estimated \$900/yr is required to cover the costs of the annual maintenance of all scuba equipment. An estimated \$478 is required for consumable field and office supplies for the long-term monitoring program for Year 1 and \$240 for Year 2, while \$100/yr is requested for the reef flat monitoring program. Consumable field and office supplies for which funding is requested include transect tapes, slates, underwater paper, pencils, rebar and nails to mark the permanent sites, batteries, battery chargers, line, buoys, PVC and miscellaneous office supplies.

## Contractual

\$9258 is requested to cover the costs associated with utilizing the University of Guam Marine Lab's boats for Year 1 and \$43697 for Year 2. The UOGML charges a rate of \$260/day; as such, the amounts

requested would cover 36 trips in Year 1 and 17 trips in Year 2. The reduced amount for Year 2 is a result of the increasing proportion of the budget required to accommodate salary increments and associated increases in fringe benefits. While the 17 trips using Marine Lab boats in Year 2 will not allow the team to reach all of the sites intended for monitoring that year, we will rely heavily on the NOAA PIRO's Achilles, for which Val Brown and the Monitoring Coordinator have received training to operate. The 19' inflatable Achilles acquired by NOAA PIRO has been used to access the Fouha Bay site, and on calm days could be used to access all of the monitoring sites if necessary.

An additional \$1,780.00/yr is requested for the rental of a UOGML boat and truck for the reef flat monitoring program. The reef flat program will require the rental of a UOGML truck to access most of the monitoring sites, but will require a boat to access the Haputo Bay reef flat site. The UOGML truck rental rate is \$50/day and will be used for 20 days, while the boat rate is \$260/day and will be used for three days of monitoring (to access the Haputo Bay site, which cannot be accessed by shore).

Task 7. Support for Public Outreach and Education

Budget and Justification

Support for Public Environmental Education and Outreach-Year 1							
Category	Federal funds	In kind Matching funds	Total				
Personnel and							
Fringe: Planner II	\$0.00	\$17,427.00	\$17,427.00				
35% or 28 hours of the	e Planner II (Christian Benitez)	will be directly involved in t	he coordination and				
implementation of the	support for public environmen	tal education and outreach tas	sk \$36530 salary +				
\$13260 fringe = \$4979	90 x 35%						
Supplies	\$1,000.00	\$0.00	\$1,000.00				
Supply costs (\$1,000)	to support the Guardians of the	Reef Training. The itemized	items are as				
follows: Miscellaneou	s outreach supplies to include 2	243  pcs x  \$1.50 = \$365  color	butcher paper, 1				
dozen x 20 pkg x $$5 =$	\$100 colored pipe cleaners pkg	g, 1 dozen x $10 \times 15 = 150$	color pencils,1				
	50 color markers,25 pcs x \$2.0	•	•				
2 2	tic storage bins to store small s	upply $4 \times $25 = $100 \text{ for Gu}$	ardian of the Reef				
Training for Year 1.							
Contractual	\$28,794.00	\$0.00	\$28,694.00				
(230) Transportation (	(230) Transportation (\$16,500) for the Simon Sanchez Traveling Ocean Fair and George Washington						
	show to provide roundtrip trans		-				
	$55 \times 80 \text{ hours} = \$4,400), \text{ Guard}$		_				
	transportation for the high school Guardians from JFK, GW, SSHS, SHS to the 25 elementary schools						
_	\$55 per hour x 140 hours = \$7,700 and Guam Nature Alliance fieldtrips \$55 per hour x 80 hours =						
\$4,400							
	ucation Items and Contractual 1						
•	\$7 = \$1050, XL 20 x \$8 = \$160						
Coloring Book printing (black and white pages, collated, folded, artwork ready (3000 x $.12 = $360$ ),							
Pledge Cards ( $\$.095 \times 3000 = \$285$ ), Guardian of the Reef Survey ( $100 \times .10 = \$10$ ) and Guardians of							
the Reef Review and Evaluation (130 x $\$20.00$ ) = $\$2600$ ; contractual services to support coral reef							
conservation efforts to include but not be limited to displays at public outreach venues; watershed hikes; clean ups; outreach items for Guam's wildland fire campaign (\$3777), and Eyes on the Reef							
		tire campaign $(\$3///)$ , and I	zyes on the Reef				
training videos (\$4012	i)						
TOTALS	\$29,794.00	\$17,427.00	\$47,121.00				

Support for Public Environmental Education and Outreach-Year 2					
Category	Federal funds	Matching funds	Total		
Personnel and					
Fringe: Planner II	\$0.00	\$17,919.00	\$17,919.00		
35% or 28 hours of the	e Planner II (Christian Benitez)	will be directly involved in t	he coordination and		
implementation of the	support for public environmen	tal education and outreach tas	sk \$37914 salary +		
\$13282 fringe = \$5119	96 x 35%				
Contractual	\$16,605.00	\$0.00	\$16,605.00		
(230) Transportation (\$12,100) for the Simon Sanchez Traveling Ocean Fair and George Washington					
Marine Mania Puppet	Show to provide roundtrip tran	sportation for the high school	l to present at the		
Elementary School and	Elementary School and Guam Nature Alliance field trip (\$55 x 80 hours = \$4400), Guardians of the				
	de roundtrip transportation for		om JFK, GW,		
SSHS, SHS to the 25 elementary schools \$55 per hour x 140 hours = \$7,700					
(230) Outreach and Ed	(230) Outreach and Education Items and Contractual Printing (\$4505) such as Guardians of the Reef t-				
shirts (SMLG 150 x $$7 = $1050$ , XL 20 x $$8 = $160$ , 2XL 4 x $$10 = $40$ ), Guardian of the Reef					
Coloring Book printing (black and white pages, collated, folded, artwork ready (3000 x .12 = \$360),					
Pledge Cards ( $\$.095 \times 3000 = \$285$ ), Guardian of the Reef Survey ( $100 \times .10 = \$10$ ) and Guardians of					
the Reef Review and Evaluation (130 x \$20.00) = \$2600					
TOTALS	\$16,605.00	\$17,919.00	\$34,524.00		

#### PERSONNEL AND FRINGE BENEFITS

The locally funded Planner II will be directly involved in the coordination and implementation of the outreach and education task in collaboration with the Watershed Coordinator. Thirty five percent of the Planner I time will be involved in the outreach and education task (In-kind match).

## **CONTRACTUAL**

Contract costs include printing for materials for public outreach events, costs for logistics and facilitation for outreach training, media costs including advertisement and airing of public service announcements (PSAs).

# **Transportation**

Transportation has been a major limiting factor regarding participant numbers at outreach events. Educators are excited by programs that include transportation along with service learning opportunities. Providing transportation maximizes exposure of the program throughout the Guam Department of Education (GDOE). BSP will contract services through Govguam DPW busing as this is the most cost effective way to accommodate the Guardians of the Reef Program, Guam Nature Alliance, and service learning versus leasing through private busing.

The budget needs for the Guardians of the Reef Program, Traveling Ocean Fair, and Marine Mania Puppet Show is \$16,500 in Year 1 and \$12,100 in Year 2: The Guardians of the Reef Program is one of Guam's most successful service learning programs available on island reaching out to over 2,400 third grade elementary school students each year for over 10 years, not including the number of high school students trained in the program and fifth graders who experience the Guardians of the Reef Program puppet show and Simon Sanchez Traveling Ocean Fair. Transportation provided by this grant ensures student participation and success. The funds from this project will provide transportation to training opportunities for students and transportation to schools for presentations. The itemized cost to provide roundtrip transportation for the high school Guardians from Simon Sanchez High School, GW High

School, JFK High School, Southern High to the elementary schools is \$55 per hour x 140 hours = \$7,700 for Year 1 and Year 2. The busing for the Simon Sanchez Traveling Ocean Fair and George Washington Marine Mania Puppet show to provide roundtrip transportation for the high school to present at the Elementary School (\$55 x 80 hours = \$4,400), and Guam Nature Alliance fieldtrips \$55 per hour x 80 hours = \$4,400 in Year 1; and Simon Sanchez Traveling Ocean Fair and George Washington Marine Mania Puppet Show to provide roundtrip transportation for the high school to present at the Elementary School and Guam Nature Alliance field trip (\$55 x 80 hours = \$4400), Guardians of the Reef Program to provide roundtrip transportation for the high school Guardians from JFK, GW, SSHS, SHS to the 25 elementary schools \$55 per hour x 140 hours = \$7,700 in Year 2.

The budget needs for the Guam Nature Alliance (\$4,400): The funds will provide transportation for Guam Nature Alliance fieldtrips which promote environmental education and service learning opportunities for students who potentially do not participate in the Guardians of the Reef Program, maximizing opportunities for Guam's youth to become more engaged through their service learning options. The itemized cost to provide roundtrip transportation Guam Nature Alliance fieldtrips is \$55 per hour x 80 hours = \$4,400 for Year 1.

Due to funding constraints we combined the busing for the Simon Sanchez Traveling Ocean Fair and George Washington Marine Mania Puppet Show to provide roundtrip transportation for the high school to present at the Elementary School and Guam Nature Alliance field trip together at \$1925 (\$55 x 35 hours = \$1925) for Year 2.

# Outreach and Education Items and Contractual Printing

Outreach and Education Items and Contractual Printing (\$12,294) such as Guardians of the Reef t-shirts (SMLG 150 x \$7 = \$1050, XL 20 x \$8 = \$160, 2XL 4 x \$10 = \$40), Guardian of the Reef Coloring Book printing (black and white pages, collated, folded, artwork ready (3000 x .12 = \$360), Pledge Cards (\$.095 x 3000 = \$285), Guardian of the Reef Survey (100 x .10 = \$10) and Guardians of the Reef Review and Evaluation (130 x \$20.00) = \$2600 in Year 1 and Outreach and Education Items and Contractual Printing (\$4505) such as Guardians of the Reef t-shirts (SMLG 150 x \$7 = \$1050, XL 20 x \$8 = \$160, 2XL 4 x \$10 = \$40), Guardian of the Reef Coloring Book printing (black and white pages, collated, folded, artwork ready (3000 x .12 = \$360), Pledge Cards ( $\$.095 \times 3000 = \$285$ ), Guardian of the Reef Survey  $(100 \text{ x} \cdot 10 = \$10)$  and Guardians of the Reef Review and Evaluation (130 x \$20.00) = \$2600 in Year 2 is essential funding will ensure the Guardians have t-shirts to distinguish and identify them as Guardians of the Reef when they go out to the elementary school to present the Guardian of the Reef presentation and the materials. This outreach item is essential for the program as the Guardians are educating the 3rd grade students about the importance of Guam's reefs as stewards of Guam's coral ecosystem. Funds will also be used to create training videos for the Eyes on the Reef (\$4012) in Year 1. Contractual services for the creation of an online training videos consisting of the following: 1. Introduction to EOR and reef impacts (10 min); 2. Overview of the online reporting form (10 min); 3. How to identify coral types (7 min); 4. How to identify and report coral bleaching (8 min); 5. How to identify and report nuisance species (7 min); 6. How to identify and report crown of thorns outbreaks (7 min); 7. How to identify and report coral abnormalities (8 min); 8. How to identify and report echinoderm disease (4 min); 9. How to identify and report marine debris and other reef impacts (7 min); and 10. Coral reef etiquette (4 min). EOR personnel will deliver presentations that will be filmed by the contractor. The contractor will then edit this footage and produce the ten short films mentioned above, then provide the completed files to EOR. The contractor is expected to provide their own equipment for recording (visual and audio) and editing.

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Guardian of the Reef T-shirts Year 1				
S	40	\$7.00	\$280.00	
M	60	\$7.00	\$420.00	
L	50	\$7.00	\$350.00	
XL	20	\$8.00	\$160.00	
2XL	4	\$10.00	\$40.00	
	174		\$1,250.00	
Guardian	of the Reef	T-shirts Y	ear 2	
S	40	\$7.00	\$280.00	
M	60	\$7.00	\$420.00	
L	50	\$7.00	\$350.00	
XL	20	\$8.00	\$160.00	
2XL	4	\$10.00	\$40.00	
	174		\$1,250.00	

Task 8. Staff Management Training for Grants and Cooperative Agreements

Budget and Justification

Staff Grants Management Training Budget Summary-Year 1						
Category	Federal funds Matching Funds		Total			
Contractual	\$5,214.00	\$0.00	\$5,214.00			
TOTALS	LS \$5,214.00 \$0.00		\$5,214.00			
Staff Gra	Staff Grants Management Training Budget Summary-Year 2					
Category	Federal funds	Matching Funds	Total			
Contractual	\$0.00	\$0.00	\$0.00			
TOTALS	\$0.00	\$0.00	\$0.00			

- o Managing Federal Grants and Cooperative Agreements for Recipients
  - Online 6 weeks, \$869
- Uniform Administrative Requirements for Federal Grants: 2 CFR 200 (Subparts A-D)
  - Online 6 weeks, \$869 and or
- o Cost Principles for Federal Grants: 2 CFR Part 200 (Subpart E) and FAR 31.2
  - Online 6 weeks, \$869

## Contractual

The funds will be used to pay for the Chief Planner, Coral Reef Resilience Coordinator and Administrative Services Officer online registration for the Management Federal Grants an Cooperative Agreements for Recipient, Uniform Administrative Requirements for Federal Grants: 2 CFR 200 Subparts A-D, and the Cost Principals for Federal Grants: 2 CFR Part 200 Subpart E and FAR 31.2.

Task 9. Bleaching Mitigation and Reef Resilience

Budget and Justification

Bleaching Mitigation and Reef Resilience Budget Summary-Year 1					
Category	Federal funds	Matching Funds	Total		
Personnel					
111 RA salary, 12 months @ \$14.94/hr	\$17,330.00	\$0.00	\$17,330.00		
111 Administrative Support: Chief					
Business Officer @ 8% of time	\$7,873.25	\$0.00	\$7,873.25		
Fringe Benefits					
113 RA fringe benefits @ 19% of					
salary to include medicare, social	¢2 242 00	φ <sub>0</sub> , 00	¢2 242 00		
security, and health benefits  113 Administrative Support - Chief	\$3,243.00	\$0.00	\$3,243.00		
Business Officer Fringe Benefits:					
retirement, medicare and health					
benefits at 8% of time	\$2,351.75	\$0.00	\$2,351.75		
Supplies					
240 Nursery platform materials	\$5,372.00	\$0.00	\$5,372.00		
240 Consumable supplies for the					
nursery	\$4,000.00	\$0.00	\$4,000.00		
Contractual					
230 Boat rental (includes truck and					
boat captain) @ \$250/day)	\$9,000.00	\$0.00	\$9,000.00		
230 SCUBA tank rental @ \$6/tank *3					
divers/day	\$540.00	\$0.00	\$540.00		
230 Dive certification (physical exam					
and safety courses)	\$1,000.00	\$0.00	\$1,000.00		
Stipend					
230 Community partner stipend @					
\$8.25/hr * 10 hr/week	\$4,290.00	\$0.00	\$4,290.00		
TOTALS	\$55,000.00	\$0.00	\$55,000.00		

## **Budget** overview

The proposed budget for this two-year project is presented in Table 1. In order to expand, and properly care for, the nursery, a dedicated Research Assistant will be necessary; this person will be a graduate student under mentorship of L. Raymundo. Administrative Support is also necessary under Research Corporation of UOG. The Chief Business Officer will provide the administration support (HR, invoices, price quotation, procurement, financial reporting) to this project. Salary and benefits are calculated at the standard University of Guam rate, set by the Research Corporation of UOG. We also request a small stipend for the community member selected to assist with the project, as the time commitment will be considerable and long-term. Boat and SCUBA tank rental prices are based on the current price charged by UOG, and we also request funding for needed dive physicals and safety courses for two project personnel,

as required by UOG's AAUS-certified dive program. Finally, nursery and consumable materials include pvc, ropes, buoys, marine epoxy, cement nails, underwater paper and replacement temperature loggers.

## Personnel and Fringe Benefits

The research assistant position is a part time position with an expected salary of \$17,330. The RCUOG will recruit a graduate student for this project. The research assistant time will be charged to the grant for the hours worked up to the expiration of the project. The research assistant fringe benefits will include medicare, social security, and health benefits. The administrative support position will be responsible for provided direct administrative support services to this project. Responsibilities include preparation and submission of financial reports, preparation of invoices for reimbursement along with corresponding documentation to the Bureau, recruitment of research assistant position, consults and advises grant funded positions on personnel matters, maintain and track the grant funded position time and effort sheets, maintains the project file, maintains the project budget by object classification and monitors the funds allocated to each object class to ensure the PI is aware of the balance on the project, process requisitions to include obtaining three price quotations, prepares Request for Information, and reviews and process vendor invoices for payment. During an 80 hour week, the Chief Business Officer will allocate up to 8% of her time to this project per pay period providing direct administrative support to the project. The administrative support fringe benefits will include retirement, medicare and health benefits.

## Supplies

An estimated \$9,372 is need for the project, \$5,372 is needed to purchase the necessary materials needed to build the nursery platform, and \$4,000 is needed to purchase the consumable supplies for the coral nursery to include pvc, ropes, buoys, marine epoxy, cement nails, underwater paper and replacement temperature loggers and miscellaneous office supplies.

#### Contractual

A total of \$10,540 is requested to cover the cost association with the following: contractual a truck and boat captain at \$250 per hours up to 36 hours to access the proposed coral nursery site in Merizo at a budget of \$9,000; SCUBA tank rental @ \$6 per tank for three divers per day prices; and \$1000 is also request needed for dive physicals and safety courses for two project personnel as this is required by UOG's AAUS-certified dive program.

## Stipends

Request for stipend for the community member selected to assist with the project, as the time commitment will be considerable and long-term. RCUOG will look for a volunteer that will be given up to \$82.50 a week in stipends (calculated at \$8.50 per hours for up to 10 hours per week) to provide assistance in the project.

#### SF-424A AND SF-424B

FY 17-18 CRCP Revised SF424

**BUDGET INFORMATION - Non-Construction Programs** 

OMB Number: 4040-0006 Expiration Date: 06/30/2014

			SECTION	SECTION A - BUDGET SUMMARY	ARY			
	Grant Program Function or	Catalog of Federal Domestic Assistance	Estimated Unobligated Funds	gated Funds		New or Revised Budget	get	
	Activity (a)	Number (b)	Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		Total (g)
-	Guam CRCP Year 1	11.482	•	<b>□</b>	425,234,00		\$	425,214.00
7	Guam CRCP Year 1 Match	11.482			00.0	49,811.00	1.00	49,811.00
m	Guam CRCP Year 2	11.482			365,000.00		0.00	365,000.00
4	Guam CRCP Year 2 Match	11.482			0.00	51,454.00	14.00	51,454.00
က်	Totals		\$	s	\$ 790,214.00		101,265.00	891,479.00
						1		

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William C. McDonald, Acting Director

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	j		GRANT PROGRAM, FUNCTION OR ACTIVITY		Total
	( <del>E</del> )	(2)	(9)	(4)	(2)
	Guam CRCP Year 1	Guam CRCP Year 1	Guam CRCP Year 2	Gusm CRCP Year 2 Match	
a. Personnel	72,879.00	37,350.00	\$ 86,217.00	38,765.00	235,211.00
b. Fringe Benefits	25,703.00	12,461.00	29,591.00	12,689.00	80,444.00
c. Travel	20,272.00	0.00	20,235.00	00.00	40,507.00
d. Equipment	0.00	0.00	0.00	0.00	
e. Supplies	4,000.00	0.00	0.00	0.00	4,000.00
f. Contractual	302,360.00	0.00	228,957.00	00.00	531,317.00
g. Construction	00.00				
h. Other	0.00				
i. Total Direct Charges (sum of 6a-6h)	425,214.00	49,811.00	365,000.00	51,454.00	\$ 891,479.00
j. Indirect Charges					\$
k. TOTALS (sum of 6i and 6j)	\$ 425,214.00	49,811.00	\$ 365,000.00	\$ 51,454.00	891,479.00
7. Program Income	95	\$	S	9	
	V	Authorized for London Deprivation	- Colination	Star	Standard Form 424A (Rev. 7-97)

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	SECTION	SECTION C - NON-FEDERAL RESOURCES	URCES		
(a) Grant Program		(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. Guam CRCP Year 1 Match		\$ 49,811.00	\$	•	49,811.00
9. Guam CRCP Year 2 Match		51,454.00			51,454.00
10.					
11.					
12. TOTAL (sum of lines 8-11)		\$ 101,265.00	5	••	\$ 101,265.00
	SECTION	SECTION D - FORECASTED CASH NEEDS	NEEDS		
	Total for 1	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
14. Non-Federal	\$ 49,811.00	12,452.75	12,452.75	12,452,75	12,452.75
15. TOTAL (sum of lines 13 and 14)	\$ 475,025.00	\$ 118,756.25	\$ 118,756.25	\$ 118,756.25	\$ 118,756.25
SECTION E	SECTION E - BUDGET ESTIMATES OF FE	ES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE	FOR BALANCE OF THE	PROJECT	
(a) Grant Program		y - 6-44 17	FUTURE FUNDING PERIODS	PERIODS (YEARS)	
16. GUAM CRCP Year 2		(D)FIRST 365,000.00	s (c) second		(e) Fourth
17.					
18.					
19.					
20. TOTAL (sum of lines 16 - 19)		365,000.00	<b>S</b>	8	8
	SECTION F	- OTHER BUDGET INFORMATION	MATION		
21. Direct Charges:		22. Indirect Charges:	Charges:		
23. Remarks:	-100-11-1				
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#### SCOPE OF WORK FOR FEDERALLY FUNDED POSITION

#### Coral Reef Watershed Coordinator Scope of Work

#### **Task Summary:**

To assist with the watershed and Conservation Action Plan (CAP) projects and projects identified in the watershed management plans. The watershed coordinator will support coral reef resilience and other ocean matters impacted by watershed activities and work in collaboration with the Guam Coastal Management Program (GCMP), Department of Agriculture (DoAG), Guam Environmental Protection Agency (GEPA), University of Guam (UOG) Water and Environmental Research Institute (WERI) and U.S. Department of Agriculture (USDA) in coordinating projects in the Manell-Geus and Piti-Asan Guam watersheds. The watershed coordinator will provide assistance improving forest habitat and support for terrestrial activities identified in the Guam Land Based Source of Pollution/Local Action Strategy. The watershed coordinator will also work with the community to involve them in the process of prioritizing and implementing projects as identified in the CAP.

#### Task Description and Methodology:

The watershed coordinator will be responsible for the coordination and leadership of addressing restoration efforts and implementation of restoration projects in Guam watersheds. The watershed coordinator will also work with business partners, village communities, etc. to relay information, provide technical assistance and facilitate training sessions for Best Management Practices (BMPs) and watershed management tools. The watershed coordinator will work with specific community projects from the Conservation Action Plan for watersheds, such as reforestation and removal of invasive species, among others in collaboration with Guam's State Historic Preservation Officer. The watershed coordinator will collaborate with WERI on the recommendations for watershed management priorities in Geus to help address issues with sedimentation on land and in near-shore communities.

#### Task 1: Implementation of watershed activities (80%)

Coordinate with various stakeholder groups to implement watershed activities listed in Conservation Action and Watershed Management Plans. The coordinator will focus on the two previously-designated coral priority sites, Manell-Geus and Piti-Asan. Current goals listed under the action plans include:

- Continue bamboo removal pilot project in Geus watershed, expanding area of forest restoration where bamboo has been replaced with native plants
- Continue utilizing volunteers from military and community in removing bamboo from Manell river channel, which causes flooding and sedimentation during large rain events
- Obtain training to be qualified to remove bamboo using chainsaws. With the ability to remove bamboo herself, the watershed coordinator will be able to accomplish much more.
- Identify priority areas in Manell-Geus to focus bamboo removal efforts
- Assist the National Marine Fisheries Service in their Coral Reef Conservation Program, which includes assessing stream water quality and determine sites for pilot conservation projects such as reforestation, soil stabilization, clearing debris from streams, etc.
- Develop a volunteer-run Forest Stewardship Program with Department of Agriculture Forestry and Soil Resources Division.
- In conjunction with USDA Natural Resources Conservation Service, develop targeted outreach materials and strategies for landowners with property in critical watershed areas to help them make land use decisions that positively impact runoff and sedimentation issues.

- Lead efforts in developing public outreach and education projects as described in the Conservation Action Plan as mentioned above.
- In association with the Guam Nature Alliance (GNA), lead efforts in developing public outreach and education projects listed in the CAP and GNA action strategies:
  - Coordinate and lead trainings for the Guardians of the Reef program, which teaches high school students to give presentations to elementary school students about the important of coral reef and watershed conservation.
  - Develop environmental tours for the community to promote respect for Guam's ecosystems and a desire to protect them.
- Along with the GCMP, help implement and promote the International Coastal Cleanup.
- Work with scientists from WERI to keep abreast of new research and knowledge relating Guam watersheds and use it to implement the Reef Resilience Strategy, and watershed CAP.
- Coordinate and conduct meetings with village members of Merizo, Piti, and Asan to educate the current conservation efforts in the watersheds in which they live, and to garner support and volunteer help for those projects.
- Provide outreach materials to local villages by holding meetings and participating in events such as the Merizo Water Festival and Crab Festival.

#### Task 2: Support coral reef initiatives (15%)

- Provide coordinating support to the Guam Coral Reef Initiative Coordinating Committee, Guam Coral Reef Initiative Policy Advisory Committee.
- Provide technical assistance to Guam's natural resource agencies and partners.
- Review and provide comments on natural resources management plans, and obtain consensus on recommendations from CRICC agencies.
- Including advising project managers on grant management, providing support and assistance to researchers, coordinating workshops and training sessions, and managing projects

#### Task 3: Support the Grant Administration of the Coral Reef Conservation Grant Program (5%)

- Assist Reef Resilience Coordinator in the programmatic requirements under the FY 2017-2018 CRCP.
- Implement the Public Outreach and Education component under the FY 2017-2018 CRCP.

#### **Task Outcomes and Products:**

By reducing (1) the amount of invasive bamboo in riparian areas, and (2) the prevalence of hunting-induced wildfires, soil erosion and, subsequently, the amount of sediment transported and deposited to Guam's reefs will decrease. This in turn will help maintain Guam's reefs as a source of food, tourism, and recreation.

With increased local awareness, support, and participation in the watershed conservation activities listed above, this assistance will result in a reduction of trash and hazardous material dumping in streams and rivers within the watershed and improved water quality in coastal waters.

- Community-run initiatives such as RARE and Guardians of the Reef will promote a sense of ownership among Guam's youth and educate them about the importance of coral reefs to Guam's economy and culture.
- Developing public outreach and education materials related to terrestrial issues such as native forest, invasive species, and reduction of poor land use practices will allow conservation information to be shared with the general public. This will be accomplished by creating posters, pamphlets and other similar media to be distributed about Guam's watersheds at numerous community activities such as village fiestas, Earth Day events, school presentations, etc.

- Coordinate and lead quarterly meetings for the community and stakeholders to discuss watershed plans.
- Develop of a watershed stewardship group in Merizo.
- Assist in updating Guam's Coral Reef Management Priorities.

#### **Locations of Position and Supervision:**

The watershed coordinator position will be housed at the Bureau of Statistics and Plans and will be under the direct supervision of the Chief Planner.

#### Coral Reef Resilience Coordinator Scope of Work

#### **Project Summary**

Guam's natural resource agencies recognize the need to continue supporting efforts to actively respond to reef threats and to incorporate reef resilience principles into coral reef management actions and strategies. Guam has formalized the Coral Reef Response Team to address acute reef impacts such as coral bleaching, coral disease, vessel groundings, and outbreaks of invasive and nuisance species, like the crown of thorns sea star (*Acanthaster planci*). The Response Team requires ongoing coordination and training opportunities to build capacity of team members, which include representatives from the Bureau of Statistics and Plans (BSP), the Guam Coastal Management Program (GCMP), the Guam Environmental Protection Agency (GEPA), the Guam Department of Agriculture Division of Aquatic and Wildlife Resources (DAWR), the University of Guam Marine Laboratory (UOGML), the National Park Service (NPS), and NOAA. Long term goals of the Response Team are:

- 5. Move beyond documenting reef ecosystem health after an impact to mitigating damages, managing resources, and restoring coral reef ecosystems.
- 6. Facilitate economic studies and assessment of damages to hold responsible parties accountable for reef impacts, which would be implemented through local legislation.
- 7. Execute an archipelagic or regional training, drill, or exercise to increase capacity to cooperatively respond to reef impacts in the Marianas and/or Micronesia.
- 8. Increase public awareness of the threats facing coral reefs and engage communities in conservation activities.

This team gathered information on coral bleaching during the 2013, 2014, and 2016 events, with recovery assessments conducted in 2015. The data from these assessments and other sources have helped shape the Guam Reef Resilience Strategy. Once finalized and approved by participating agencies (by November 2017), the Reef Resilience Strategy will be implemented to integrate reef resilience concepts into initiatives of the Government of Guam and reframe coral reef management priorities on Guam.

Furthermore, the management of Guam's CRCP grant projects requires proper project reporting and implementation, fulfillment of information requests, and production of documents including grant applications. The Guam Coral Reef Initiative (CRI) requires further coordination to support CRCP-funded projects, project managers, and information requests from natural resource agencies on Guam.

The Coral Reef Resilience Coordinator will address these needs and goals by coordinating the Response Team and facilitating response activities, supporting Guam's US Coral Reef Point of Contact, the US Coral Reef Task Force, and the All Islands Committee, and preparing grant proposals and reports while overseeing CRCP-funded projects on Guam.

#### **Project Location**

The Coral Reef Resilience Coordinator will be employed at the Bureau of Statistics and Plans as a Biologist II (Grade M, Step 1-2). The Bureau of Statistics and Plans (BSP) is a staff agency to the Office of the Governor, housed within the Ricardo J. Bordallo Office of the Governor Complex. Public Law 20-147 mandates that it is BSP's responsibility to undertake any planning activity that is not being carried out or that is not the function of another department. BSP has the legislative flexibility to appraise, coordinate, prepare, and assist in the development of a wide range of plans, policies, and studies that further economic, social, land use, environmental, and infrastructure goals, priorities, and planning activities. This flexibility is reflected in BSP's mission statement: to ensure Guam's resources are

effectively used for the benefit of present and future generations by ensuring consistency among various plans, policies and programs.

The position will be hired through the normal Government of Guam (GovGuam) hiring practices through a limited term appointment under the GovGuam job classification as a Biologist II; BSP is unable to hire this position as a permanent classified employee due to the funding source.

#### **Project Description**

The outcome of this project will be one full time hire dedicated to coordination of activities related to fulfilling the objectives and priorities of Guam's LAS and the Reef Resilience Strategy, which are imperative to long-term coral reef conservation and protection. The Coral Reef Resilience Coordinator will collaborate with GCMP, GEPA, DAWR, UOGML, NPS, and NOAA to respond to acute threats facing Guam's coral reef ecosystems. The Coordinator will also manage grants funded by CRCP and administered by BSP to ensure timely and professional project implementation and reporting and support Guam's participation in the US Coral Reef Taskforce (CRTF) and the All Islands Committee (AIC), while representing Guam in various working groups. Additionally, the Coordinator will assist in supervision of the NOAA Coral Fellow at BSP.

The Coordinator will provide support for ongoing Guam Coral Reef Initiative (CRI) activities and projects, and will work closely with Guam CRI managers and staff to implement program goals.

#### **Statement of Work**

#### Task 1: Coordinate the Guam Coral Reef Response Team (30%)

• Coordinate the Guam Coral Reef Response Team, including coordination of quarterly meetings and response activities, and facilitation of at least one training exercise per year to build the capacity of the Response Team to respond to acute impacts to Guam's reefs.

#### Task 2: Manage the CRCP grant in compliance with grant requirements (35%)

- In support of the CRCP Cooperative Agreement and the Guam CRI, prepare quarterly grant progress reports, the CRCP FY19-20 grant proposal, and other progress reports and informational documents as needed.
- Assist the Chief Planner to oversee the administration and implementation of CRCP-funded projects on Guam.
- Assist the Chief Planner to provide grant-related assistance and technical support to project managers and GovGuam agencies.
- Seek project proposals from local entities in advance of the CRCP FY19-20 grant application cycle and coordinate the review and recommendation of selected projects.

#### Task 3: Support Guam's participation in the USCRTF and AIC (15%)

- Participate in USCRTF Working Group and Steering Committee meetings and meetings of the AIC.
- Provide feedback on CRTF and AIC proposals, plans, and documents as needed.

#### Task 4: Provide technical assistance for projects related to the Guam CRI (20%)

- Provide technical assistance and support for field work (snorkeling) and data analysis for questiondriven projects that are relevant to establishing baselines, understanding impacts, improving management, and increasing resilience of Guam's coral reef resources.
- Assist in supervision of the 2018-2020 Coral Fellow at BSP.

#### **Task Outcomes and Products:**

- Quarterly meetings of the response team and two annual training exercises
  - o Benefit: Increased capacity to respond to acute threats to Guam's coral reefs
  - o Evaluation: Meeting attendance and feedback from training participants
- Submission of the CRCP FY19-20 grant proposal
  - o Benefit: Continued support for Guam's Coral Reef Initiative projects
  - o Evaluation: Successful submission of proposal by deadline and successful funding of submitted projects

#### Locations of Position and Supervision:

The coral reef resilience coordinator position will be housed at the Bureau of Statistics and Plans and will be under the direct supervision of the Chief Planner.

## Planner II – Coral Reef Support for Outreach and Education In-kind Match

#### **Task Summary**

The Planner II will provide support to the Watershed Coordinator in the implementation of the outreach and education activities defined in this grant, more specifically, the coordination of the logistics for the Guardian of the Reef presentation to the Elementary Schools, the coordination of the bus schedule for the Guam Nature Alliance watershed tours and hikes, assist in setting up outreach and education display at events, take photos of the CRCP and GNA outreach and education events, and assist with creating coral reef education message for outreach materials.

#### Task Description and Methodology:

The Planner II is a locally funded position. Thirty five percent of the Planner II time will be spent assisting the Watershed Coordinator and the Bureau's staff in the implementation of the Outreach and Education component of the FY 17-18 Coral Reef Conservation Grant Program to include the following:

- Obtain three price quotations at the end of September for the Guardian of the Reef bus transportation that will be used to transport the Guardians to the Elementary School to ensure a purchase order is issued before the Guardian of the Reef training.
- Schedule the Guardian of the Reef presentation at the Elementary School from February to April.
- Obtain three price quotations in mid September for the Guardian of the Reef t-shirt to ensure purchase order is issued by mid October and the t-shirt are delivered before the Guardian of the Reef training and or before the Guardians go out to the school.
- Obtain three price quotations for the Guam Nature Alliance bus transportation to ensure purchase order is issued by the end of January and beginning of February.
- Assist in the design of education message for the outreach items, educational pamphlets, and outreach displays.

#### **Task Outcomes and Products:**

- Guardians of the Reef t-shirts are order and delivered before the training date.
- Implementation of the Guardians of the Reef training.
- Bus transportation secured for the Guardian of the Reef presentation and GNA outreach events.
- Guardian of the Reef presentation scheduled with the Elementary School.
- Capture photo of the outreach and education.
- Educational pamphlets disseminated.

#### **Locations of Position and Supervision:**

The Planner II is a locally funded position housed at the Bureau of Statistics and Plans and is under the direct supervision of the detailed Planner IV within the Bureau of Statistics Socio Economic Planning Program. The Chief Planner has overall supervision of the Socio Economic Planning Program.

#### Chief Planner – Coral Reef Resilience Coordinator Scope of Work In-Kind Match

#### **Task Summary**

The Chief Planner will provide support to the Coral Reef Resilience Coordinator in the implementation of FY 17-18 CRCP Cooperative Agreement. The Chief Planner will guide the Coral Reef Resilience Coordinator in the preparation of the quarterly progress reports, reprogramming request, establishment of the Grant Award, review and compliance with the SACS, and implementation of the programmatic agreement.

#### Task Description and Methodology:

The Chief Planner is a locally funded position. Thirty five percent of the Chief Planner's time will be spent assisting the Coral Reef Resilience Coordinator implement the FY 17-18 CRCP Programmatic Agreement to include the following:

- Establishment of the Grant Award
- Review and comply with the Special Award Conditions
- Implement the programmatic agreement
- Provide guidance to Coral Reef Resilience Coordinator

#### **Task Outcomes and Products:**

- FY 17-18 Quarterly Progress Report
- FY17-18 Final Progress Report

#### **Locations of Position and Supervision:**

The Chief Planner is locally funded and housed at the Bureau of Statistics and Plans and is under the direct supervision of the Director and Deputy Director of the Bureau of Statistics and Plans. The Chief Planner has oversees the Bureau of Statistics Socio Economic Planning Program, Planning Information Program, and Guam Coastal Management Program.

#### Monitoring Program Coordinator – Coral Reef Biologist Comprehensive Long-term Coral Reef Monitoring Program

#### **Task Summary:**

The Monitoring Program Coordinator's primary role is to coordinate all aspects of the project "Comprehensive Long-term Monitoring at Permanent Sites on Guam," including project administration; coral reef data collection, management, and analysis; management of project database and associated web applications; report development; and outreach. This position also involves coordinating the development of jurisdictional coral reef status reports, providing technical assistance to Government of Guam natural resources agencies, and providing support for regional initiatives.

#### Goals and Objectives:

The primary goals of the updated Guam Coral Reef Monitoring Plan, according to which the project "Comprehensive Long-term Monitoring of Permanent Sites on Guam" is carried out, are to:

- Determine the status and trends in selected coral reef ecosystem indicators to better inform the resource managers' decision making process and increase the effectiveness of natural resource management on Guam.
- Provide managers with early notice of abnormal conditions of selected resources to encourage effective mitigation measures and reduce the costs of management.
- Provide data to better understand the dynamic nature and condition of the island's coastal ecosystems.
- Allow natural resource agencies to meet certain legal and Congressional mandates related to coastal resource protection.
- Measure progress towards performance goals.

#### **Project Description**

Guam's comprehensive long-term coral reef monitoring program involves the regular monitoring of a suite of coral reef ecosystem health parameters at high priority sites around Guam. The program continues to be implemented according to an update to the coral reef monitoring strategy originally developed in 2006 by the Guam Coral Reef Monitoring Group (GCRMG). Data collection began in 2009 and since then data has been collected at four sites, with the establishment of three additional sites planned for late 2014/early 2015. The program's comprehensive approach to ecological monitoring, combined with the high density of samples within a given site, provide unique data critical to understanding changes in condition at these high priority sites and for the effective management of these areas. In addition to the primary set of tasks related directly to the long-term monitoring of coral reefs at high priority permanent sites, the Monitoring Program Coordinator also coordinates the development of jurisdictional coral reef status reports, provides technical assistance to Government of Guam natural resources agencies, and provides support for regional initiatives.

#### **Task Descriptions:**

Task 1: Administration and implementation of the "Comprehensive Long-term Coral Reef Monitoring at Permanent Sites on Guam" project (75%)

- Coordinate the administration and implementation of the "Long-term Coral Reef Monitoring at Permanent Sites on Guam" project (also known as the Guam Long-term Coral Reef Monitoring Program), including grant proposal development; procurement; the collection, management, analysis, and presentation of coral reef monitoring data; and directly related activities
- Participate in the development of grant proposals, including the formulation, monitoring, and control of budget for the Guam Long-term Coral Reef Monitoring Program and related activities.

- Plan, coordinate, and direct the activities of subordinate biologists and auxiliary personnel hired to support the Guam Long-term Coral Reef Monitoring Program; these personnel may include the Monitoring Technical Support Specialist and the UOGML Monitoring Assistants.
- Coordinate the activities of personnel from other agencies/organizations participating in the Guam Long-term Coral Reef Monitoring Program and related monitoring activities carried out as part of the U.S. Coral Reef State and Territory Monitoring Program.

#### Task 2: Manage Guam's coral reef monitoring database and associated applications (10%)

• Coordinate the development and maintenance of a relational database and associated applications for the management and distribution of coral reef monitoring data

## Task 3: Coordinate the development of jurisdictional coral reef status reports and prepare technical papers (5%)

- Coordinate development of the Status of the Coral Reef Ecosystems of Guam Report
- Prepare technical papers for publication
- Provide data to managers to improve understanding of the dynamic nature and condition of the island's coral ecosystems and to contribute to effective coral reef management

#### Task 4: Provide technical support and assistance for Government of Guam agencies and partners (5%)

- Provide technical advice to the natural resource agency personnel involved in reviewing permit applications for projects with potential impacts to Guam's coral reef resources
- Direct the conduct of, and participates in field surveys, including those that may require the use of scuba equipment, for the collection of biological and environmental data
- Analyze and evaluate environmental impact statements, assessments, mitigation and development plans related to impacts to Guam's natural resources.

#### Task 5: Support Regional Initiatives (5%)

• Lead or participate in marine resource measures and related groups for regional environmental initiatives

#### Locations of Positions and Supervision:

The Monitoring Program Coordinator will be housed at the University of Guam Marine Lab and will be under the direct supervision of the Director of the Marine Lab.

#### Coral Reef Biologist - Technical Support Comprehensive Long-term Coral Reef Monitoring Program

#### **Task Summary:**

The primary role of the Coral Reef Biologist – Technical Support staff is to assist the Monitoring Program Coordinator in the implementation of the project "Comprehensive Long-term Monitoring at Permanent Sites on Guam." Tasks include assisting with project administration; coral reef data collection, management, and analysis; management of project database and associated web applications; report development; and outreach. This position also involves coordinating the development of jurisdictional coral reef status reports, providing technical assistance to Government of Guam natural resources agencies, and providing support for regional initiatives.

#### Goals and Objectives:

The primary goals of the updated Guam Coral Reef Monitoring Plan, according to which the project "Comprehensive Long-term Monitoring of Permanent Sites on Guam" is carried out, are to:

- Determine the status and trends in selected coral reef ecosystem indicators to better inform the resource managers' decision making process and increase the effectiveness of natural resource management on Guam.
- Provide managers with early notice of abnormal conditions of selected resources to encourage effective mitigation measures and reduce the costs of management.
- Provide data to better understand the dynamic nature and condition of the island's coastal ecosystems.
- Allow natural resource agencies to meet certain legal and Congressional mandates related to coastal resource protection.
- Measure progress towards performance goals.

#### **Project Description**

Guam's comprehensive long-term coral reef monitoring program involves the regular monitoring of a suite of coral reef ecosystem health parameters at high priority sites around Guam. The program continues to be implemented according to an update to the coral reef monitoring strategy originally developed in 2006 by the Guam Coral Reef Monitoring Group (GCRMG). Data collection began in 2009 and since then data has been collected at four sites, with the establishment of three additional sites planned for late 2014/early 2015. The program's comprehensive approach to ecological monitoring, combined with the high density of samples within a given site, provide unique data critical to understanding changes in condition at these high priority sites and for the effective management of these areas. In addition to the primary set of tasks related directly to the long-term monitoring of coral reefs at high priority permanent sites, the Coral Reef Biologist – Technical Support staff will also contribute to the development of jurisdictional coral reef status reports and will provide technical assistance to Government of Guam natural resources agencies.

## Task 1: Assist with implementation of the project "Comprehensive Long-term Coral Reef Monitoring of Permanent Sites on Guam" (80 %)

- Assist the Monitoring Program Coordinator with project administration, including procurement, grant development, and related activities
- Conduct coral reef data collection, management, and analysis
- Develop website and outreach materials, including, but not limited to, newsletter articles, brochures, and posters
- Conduct outreach activities, such as representing monitoring program at Earth Day and other events and providing presentations to students and other interested groups

## Task 2: Assist with management of Guam's coral reef monitoring database and associated applications (10 %)

• Assist with development and maintenance of database and associated applications for the management and distribution of coral reef monitoring data.

#### Task 3: Technical Support (10 %)

- Provide technical support to the Guam Coral Reef Initiative Coordinating Committee, Guam Coral Reef Initiative Policy Advisory Committee, and the Guam Governor's Point of Contact to coral reef, fisheries, and ocean matters.
- Participate in the development of the Status of the Coral Reef Ecosystems of Guam Report and related reports
- Assist Monitoring Program Coordinator with preparation of technical papers for publication
- Assist the Monitoring Program Coordinator in providing technical advice to the natural resource agency personnel involved in reviewing permit applications for projects with potential impacts to Guam's coral reef resources
- Assist the Monitoring Coordinator with the field surveys, including those that may require the use of scuba equipment, for the collection of biological and environmental data
- Assist the Monitoring Coordinator with the review of environmental impact statements, assessments, mitigation and development plans

#### Locations of Positions and Supervision:

The Coral Reef Biologist - Technical Support position will be housed at the University of Guam Marine Laboratory and will be under the direct supervision of the Monitoring Program Coordinator.

#### CERTIFICATIONS REGARDING LOBBYING

#### CERTIFICATION REGARDING LOBBYING

Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Commerce determines to award the covered transaction, grant, or cooperative agreement.

#### **LOBBYING**

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over \$100,000 or a loan or loan guarantee over \$150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connecction with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying." in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into, Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

#### Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

NAME OF APPLICANT

AWARD NUMBER AND/OR PROJECT NAME

Guam Bureau of Statistics and Plans

Guam's FY 17-18 CRCP Grant

PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Manuel Q. Cruz, Deputy Director

SIGNATURE

DATE

2/15/17

### **PERMITS**

Eddie Baza Calvo Governor of Guam

Lieutenant Governor

Ray Tenorio



QUAM

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/3

Fax: (671) 477-1812

Lorilee T. Crisostomo
Director

FEB 1 2 2015

Dr. Terry J. Donaldson
Director
University of Guam
Marine Laboratory
Mangilao, Guam 96923

Hafa Adai Dr. Donaldson:

The Bureau of Statistics and Plans has reviewed the Supplemental Federal Consistency Certification submitted by Dr. Terry J. Donaldson, Director, of the University of Guam Marine Laboratory on January 22, 2015. Upon review of the application, there were no substantial changes in the activity relevant to GCMP's enforceable policies; or significant new circumstances or information relevant to the activity's effect on any coastal use or resource. Therefore, no determination is needed per 15 CFR Part 930, §930.46.

The project is for continued monitoring of benthic and fish communities at both fixed and non-fixed reef sampling sites within the Guam Marine Preserves, Western Shoals, Cocos Forereef, Fouha Bay and potentially other sites as listed in the 2009 strategy update document, to track changes and causes of the changes in reef health at several key sites around Guam. The Guam Long-term Coral Reef Monitoring Program is funded by National Oceanic and Atmospheric Administration (NOAA) Coral Reef Initiative (CRI) Grants. This monitoring effort is in coordination with the natural resource departments and agencies of the Government of Guam including the Guam Environmental Protection Agency (GEPA), Agriculture's Division of Aquatic and Wildlife Resources (DoAg-DAWR) and NOAA National Marine Fisheries Service (NMFS).

Should you have any questions regarding this letter please contact Mr. Edwin Reyes, Guam Coastal Management Program Administrator or Ms. Christine C. Fejeran, Planner at 475-9647 or email <a href="mailto:edwin.reyes@bsp.guam.gov">edwin.reyes@bsp.guam.gov</a> or <a href="mailto:christine.camacho@bsp.guam.gov">christine.camacho@bsp.guam.gov</a> respectively.

Sincerely,

LORILEE T. CRISOSTOMO

Director

**Enclosures** 

cc: GEPA

DoAg/DAWR

DLM

DPR/GHPO

ACOE/R. Winn

NOAA /NMFS and A. Loerzel

OAG/J. Toft



#### DEPARTMENT OF THE ARMY

U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT Guam Field Office, PSC 455, Box 188, FPO AP 96540

March 13, 2015

Regulatory Office

File Nos. POH-2015-00018 POH-2015-00022 POH-2015-00023

Dr. Terry J. Donaldson Director University of Guam Marine Laboratory Manigilao, Guam 96913

#### **Nationwide Permit Verification**

#### Dear Dr. Donaldson:

This is in response to your request, on behalf of the University of Guam Marine Laboratory, for Department of the Army (DA) authorization for the installation of permanent demarcations of monitoring sites associated with the Comprehensive Long-term Coral Reef Monitoring Program in Guam. The monitoring site locations include the Achang Reef Flat, Cocos Barrier Reef, and Fouha Bay. The regulatory actions have been assigned the following file numbers: POH-2015-00018 (Achang), POH-2015-00022 (Cocos East), and POH-2015-00023 (Fouha). These file numbers should be referred to in all future correspondence with this office.

The project involves the installation of steel rebar and masonry nails to demarcate transect points and sampling quadrats respectively at the monitoring sites. The rebar and nails would be installed by hand with a mallet and would be installed in non-living substrate and physical disturbances to coral or other sensitive benthic organisms would be avoided during installation.

DA permit authorization is necessary because the project involves the installation of structures in tidal navigable waters of the U.S. under our regulatory jurisdiction. Based upon the information and plans provided, we hereby verify that the proposed work, which would be performed in accordance with the enclosed plans (3 sheets, dated March 2015) is authorized by Nationwide Permit (NWP) No. 5, *Scientific Measurement Devices*.

You must comply with the enclosed *Nationwide Permit General Conditions* and *Honolulu District Regional Conditions*.

This verification of the authorized work in navigable waters of the U.S. will be valid until March 17, 2017. If you find that you need more time to complete the authorized activity, please contact this office at least one month before the above date is reached. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation. Nothing

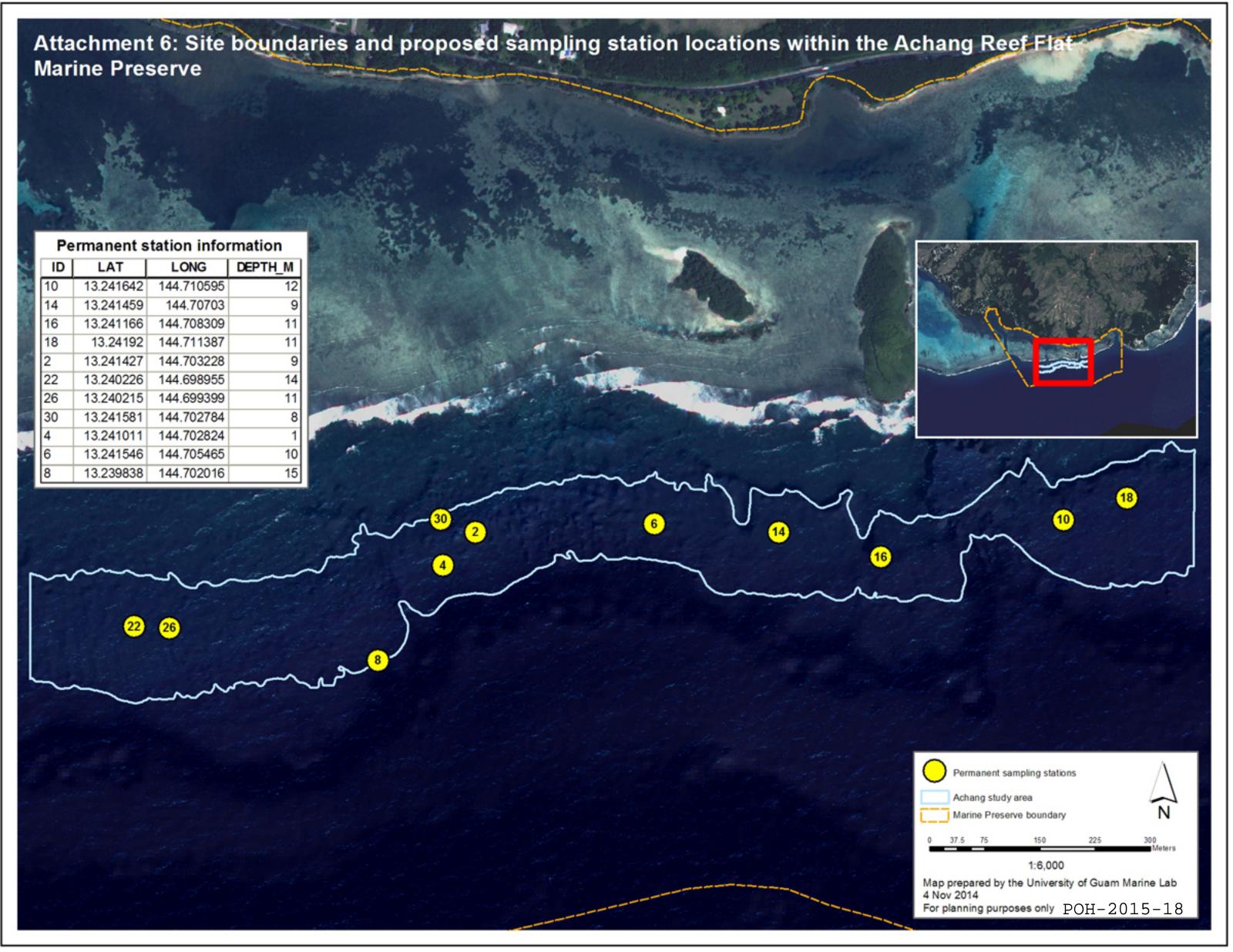
in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

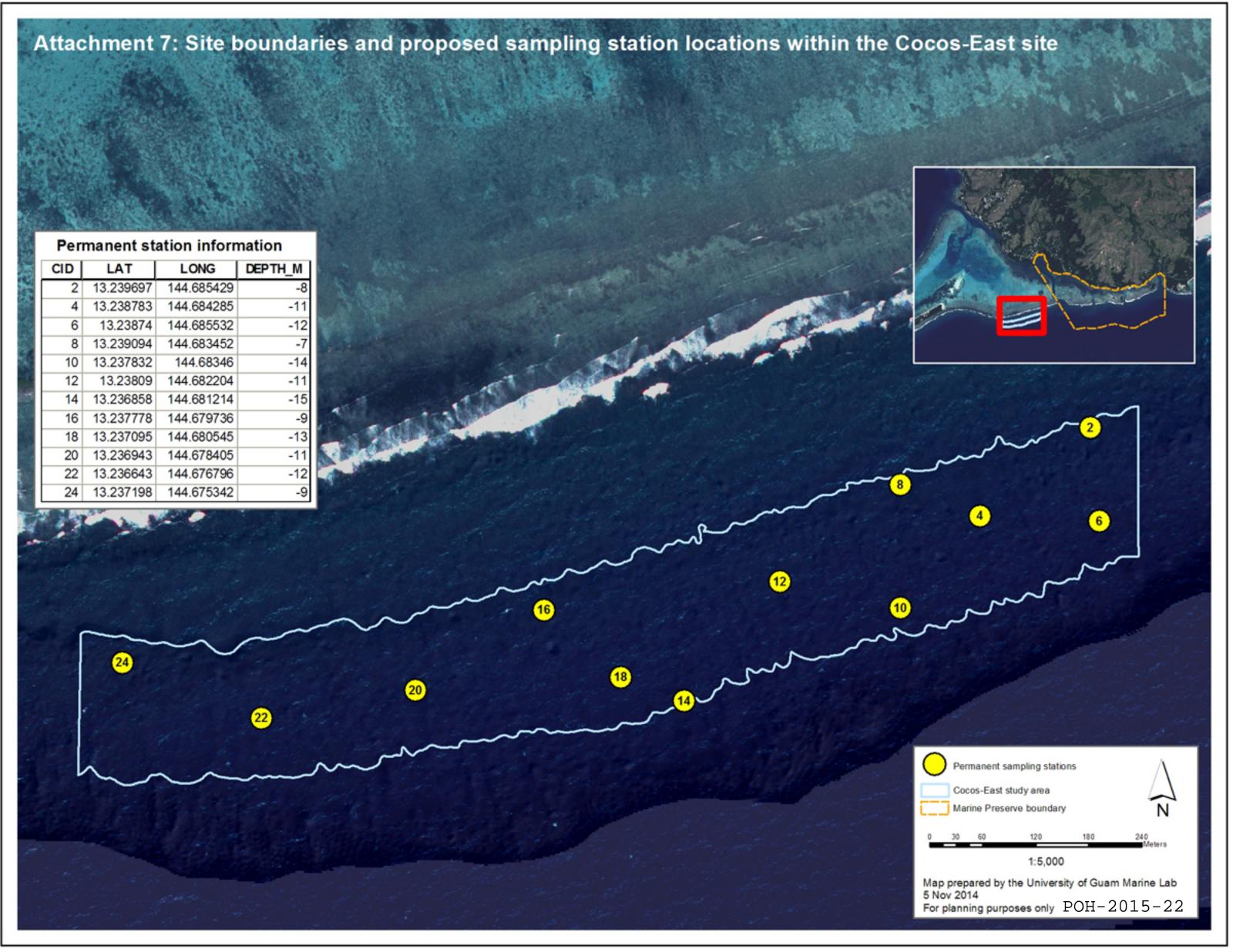
Upon completing the authorized work, please fill out and return the enclosed *Compliance Certificate with Department of the Army Permit* form. Thank you for your cooperation with the DA Regulatory Program. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form is available at <a href="http://corpsmapu.usace.army.mil/cm\_apex/f?p=136:4:0">http://corpsmapu.usace.army.mil/cm\_apex/f?p=136:4:0</a>. Should you have any questions, please contact me at (671) 339-2108 or by email at ryan.h.winn@usace.army.mil.

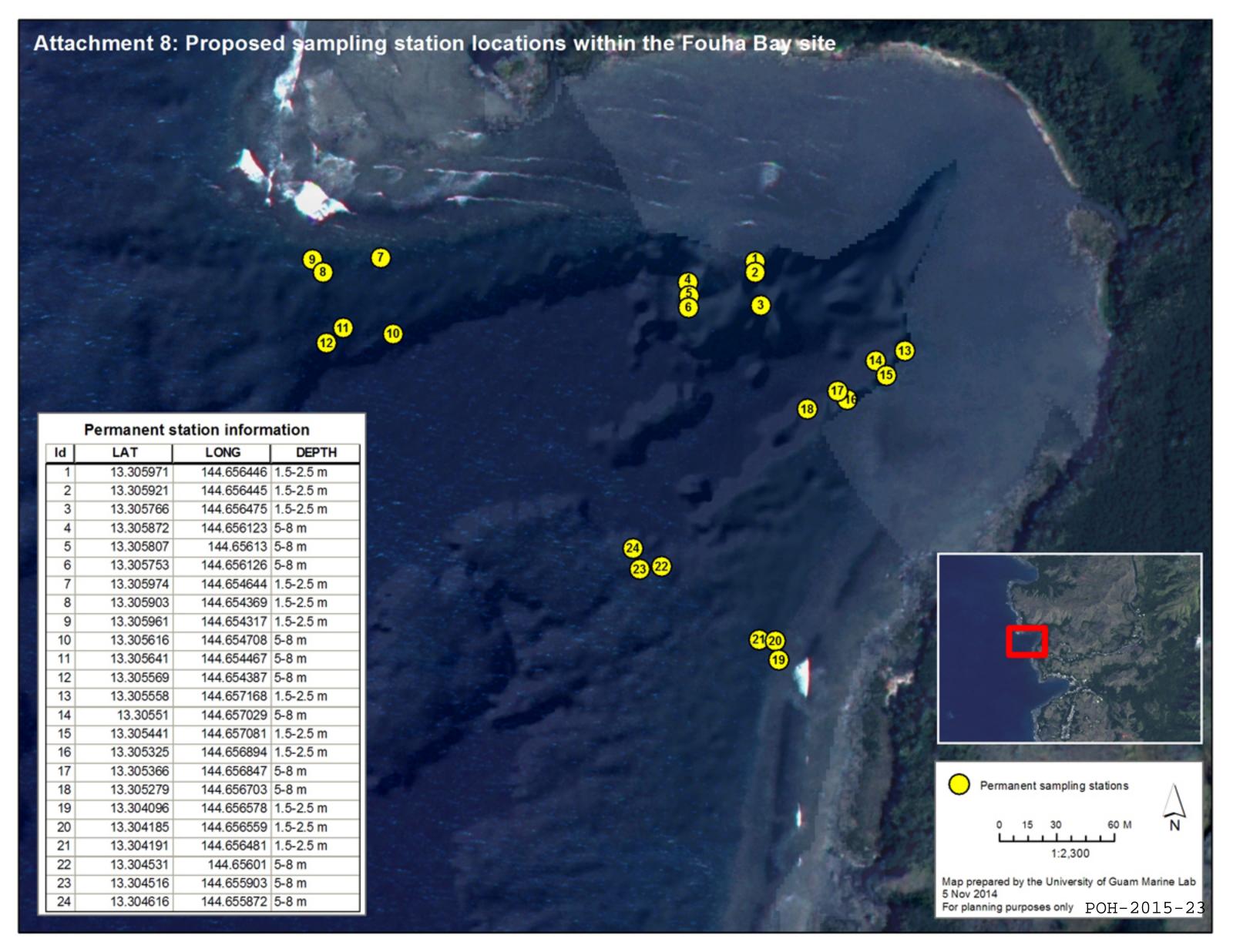
Sincerely,

Ryan H. Winn Guam Field Office

f- 1. (=







## **Department of the Army Permit Application**

Date R	eceived	by CE	POH-RO

U.S. Army Corps of Engineers Honolulu District	Send Completed Application to: Honolulu District, U.S. Army Corps of Engineers Regulatory Office [CEPOH-RO] Building. 230 Fort Shafter, Hawaii 96858-5440 or email to: CEPOH-RO@usace.army.mil
DA File Number	

(1) APPLICANT A	AND LANDOW	NER CON	TACTI	NFORMATION		
	Applicant		Property	Owner (if different)		norized Agent (if applicable) Consultant
Contact Name						
Business Name						
Mailing Address 1						
Mailing Address 2						
City, State, Zip						
Business Phone						
Cell Phone						
Fax						
Email						
(2) PROJECT INI	FORMATION					
A. Provide the proje	ect location.					
Project Name		Tax Map	Key (TM	1K):	Latitud	le and Longitude
D : (A)		0:: (			0	
Project Address / L	ocation	City (nea	rest)		County	1
Brief Directions to the	ne Site					
B. What types of wa	terbodies or wetl	ands are p	resent in	your project area	? (Check	all that apply.)
River / Stream		□ Non-Ti			-	e / Reservoir / Pond
■ Estuary or Tidal	Wetland	Other			☐ Pac	ific Ocean
Waterbody or Wetla	and Name**	River Mile	)	Watershed		Island
C. Indicate the proje	ect category. (Che	eck all that	apply.)	<u>I</u>		
Commercial Dev	velopment	■ Industri	al Devel	opment	☑ Residence	dential Development
■ Institutional Deve	elopment	□ Agricult	tural		Recr	eational
□ Transportation		Restor	ation		■ Bank	Stabilization
□ Dredging		Utility lin	nes		Surv	ey or Sampling
☐ In- or Over-Wate	er Structure	■ Mainter	nance		Othe	r:
* la desimal (amaza) (a	44.0000 400.00	222				

<sup>\*</sup> In decimal format (e.g., 44.9399, -123.0283)
\*\* If there is no official name for the wetland or waterway, create a unique name (such as "Wetland 1" or "Tributary A").

(3) PROJECT PURPOSE AND NEED
Provide a statement of the purpose and need for the overall project.
(4) DESCRIPTION OF RESOURCES IN PROJECT AREA
A. Describe the existing physical and biological characteristics of each wetland or waterway. Reference the wetland and waters delineation report if one is available. Include the list of items provided in the instructions. Submit the biological survey with the application if one has been completed.
B. Describe the existing navigation, fishing and recreational use of the waterway or wetland.
(5) PROJECT SPECIFIC CRITERIA AND ALTERNATIVES ANALYSIS
Describe project-specific criteria necessary to achieve the project purpose. Describe alternative sites and project designs that were considered to avoid or minimize impacts to the waterway or wetland.

(6) PROJECT DESCRIPTION
A. Briefly summarize the overall project including work in areas both in and outside of waters or wetlands.
B. Describe work within waters and wetlands.
C. Construction Methods including any temporary work required, equipment/materials necessary,
staging/access locations, location of stockpiles. Describe best management practices i.e. how the activities
l will ha accomplished while minimizing impacts to waters and/or wetlands
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will be accomplished while minimizing impacts to waters and/or wetlands.
D. Describe source of fill material and disposal locations if known.

(6) PROJECT DESC	CRIPTIC	N								
E. Construction seque	ence and	timeline.								
What is the estimated	project s	tart date?	•							
What is the estimated	project c	ompletio	n date?							
Is any of the work und If yes, describe.	erway or	already (	complete?	?	Yes	□No				
E Fill Volumes and Di	mancian	(if more	thon 4 iss-		itaa isalu-l	0.00	on, tob!	0.00	n attack	nmont)
F. Fill Volumes and Di	mensions	(ii more	-			e a summ	ary tabi	e as a	n attacr	iment)
Wetland / Waterbody	Length	Width	Fill Dime	nsion	Area	Volume		ion of		Material***
Name *	Length Width Depth Area Volume Impact**  (ft.) (ft.) (ft.) (sq.ft. or ac.) (c.y.)					act^^				
G. Total Fill Volumes a	and Dime	nsions								
Fill Impacts to Waters					Length	n (ft.)	Area (s	sq. ft o	r ac.)	Volume (c.y.)
Total Fill to Wetlands										
Total Fill Below Ordinary	High Wate	er								
Total Fill Below High Tide										
Total Fill Below Mean Hig	h Water T	idal Eleva	tion							
H. Removal Volumes a	and Dime	nsions (if	more than	1 4 im	pact sites,	include a	summa	ry tab	le as an	attachment)
Wetland / Waterbody Removal Dimensions Duration of										
Name*	Length (ft.)	Width (ft.)	Depth (ft.)	(sq	Area . ft. or ac.)	Volume (c.y.)	Impa	act**		Material***
I Dradaina Valumas a	nd Dimer	oiens								
I. Dredging Volumes a		SIONS			1 41 44	\ \ \	1. (6)	10.	Idla (fe )	Wales of S
Dredging Impacts to Water		tala NAZ de la	T: -1 = 1 = 1		Length (ft	.) Dept	th (ft.)	Wic	lth (ft.)	Volume (c.y.)
* If there is no official nar	ne for the	wetland or	waterway,	creat	te a unique					ributary A").

<sup>\*\*</sup> Indicate the days, months or years the fill or removal will remain. Enter "permanent" if applicable.

\*\*\* Example: soil, gravel, wood, concrete, pilings, rock etc.

\*\*\*If the High Tide Line is not observable in the field, the Mean Higher High Water Elevation may be acceptable.

(7) ADDITIONAL INFOR	MATION						
Are there any federally liste Species Act on the project s	site?		Yes	□ No	Unknown		
Is the project site within des identified under the Endang		al habitat	Yes	□ No	Unknown		
Is the project site within the	100-year floodplain?		Yes	■ No	Unknown		
* If yes to listed species or critic explain in Block 4 and describe					n prepared or		
Is the project site within a S (i.e. Marine Life Conservation Management Area, etc.)		•	Yes	□No	Unknown		
Will the overall project involudisturbance of one acre or rate in the second second will be will be will be second	more?	or ground	Yes	No	Unknown		
Is the fill or dredged materia or off- site spills?	al a carrier of contaminants	from on-site	Yes	☐ No	Unknown		
Has the fill or dredged mate tested? *If yes, explain in Block 4 and p		•	Yes	☐ No	Unknown		
Are there known Cultural Resources in the project area? Has coordination with the State Historic Preservation Division occurred (or 6E completed)? * If yes, provide a copy of any surveys and/or 6E with this application.							
Identify any other federal agency that is funding, authorizing or implementing the project.							
Agency Name Contact Name Phone Number Most Recent Date of Contact							
List other certificates or approvals/denials required or received from other federal, state or local agencies for work described in this application. For example, certain activities that require a Department of Army permit also require 401 Water Quality Certification.							
Approving Agency Certificate/ approval / denial description Date Appl					e Applied		
Other U.S. Army Corps of Engineers (Corps) Actions associated with this site? (Check all that apply)							
☐ Work proposed on or ove	er lands owned by or leased		rps				
Other Corps Permits	الممثلثات	Corps #					
☐ Violation for Unauthorized	-	Corps #					
Wetland and Waters Del		Corps #	ovido o copy y	with the appl	ication)		
	delineation has been comployed the wetland / waters of				ioation <i>ij</i>		

(8) IMPACTS, RESTOR	RATION/REHABILITATION, COMPENSATORY MITIGATION
A. Describe unavoidable e permanent, temporary, dir	environmental impacts that are likely to result from the proposed project. Include rect, and indirect impacts.
	or fill or disturbance of vegetation in waterways, wetlands or riparian (i.e., s how the site will be restored after construction.
Compensatory Mitigation	on
Permittee-	Permittee-
responsible Onsite	□ responsible Offsite
Mitigation	mitigation
	tion of mitigation approach and the rationale for choosing that approach. If you not be required, explain why.

# (9) ADJACENT PROPERTY OWNERS FOR PROJECT AND MITIGATION SITE Pre-printed mailing labels of adjacent property owners attached Project Site Adjacent Property Owners Mitigation Site Adjacent Property Owners

Contact Name Address 1 Address 2 City, State ZIP Code

Contact Name Address 1 Address 2 City, State ZIP Code

Contact Name Address 1 Address 2 City, State ZIP Code

Contact Name Address 1 Address 2 City, State ZIP Code

Contact Name Address 1 Address 2 City, State ZIP Code

Contact Name Address 1 Address 2 City, State ZIP Code

Contact Name Address 1 Address 2 City, State ZIP Code

Contact Name Address 1 Address 2 City, State ZIP Code

<b>`</b>	her Certificates or es for Work Descri	• •		from other Federa	I, State, or
Agency	Approval Type	<u>Number</u>	Date Applied	Date Approved	<u>Date Denied</u>

#### (11) SIGNATURES

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby authorize the person identified in the authorized agent block below to act in my behalf as my agent in the processing of this application and to furnish supplemental information in support of this permit application. I understand that the granting of other permits by local, county, state or federal agencies does not release me from the requirement of obtaining the permits requested before commencing the project.

Title	
Date	
Authorized Agent Signature	
Title	
Date	
Landowner of the Project Site (if different from applicant)  Print Name  Title	
Title	
Date	
Landowner of the Mitigation Site (if different from applicant)	
Title	
Date	

(12) ATTACHMENTS
☐ Drawings (items in bold are required)
☐ Location map with roads identified
☐ U.S.G.S topographic map
☐ Tax lot map
☐ Site plan(s)
☐ Cross section drawing(s)
☐ Recent aerial photo
☐ Project photos
☐ Erosion and Pollution Control Plan(s), if applicable
☐ Pre-printed labels for adjacent property owners (Required if more than 5)
Restoration plan or rehabilitation plan for temporary impacts
☐ Alternatives analysis
☐ Biological assessment (if requested by Corps project manager during pre-application coordination.)
Other:

#### INSTRUCTIONS FOR PREPARING THE PERMIT APPLICATION

General Instructions and Tips

- Provide the information in the appropriate blocks of the application form. If you need more space, provide a summary in the space provided and attach additional detail as an appendix to the application.
- Not all items on the application form will apply to all projects.
- For most applications, binding and section dividers are not necessary and require additional handling.

The information requested on the form is necessary for the agency to begin the review. For complex projects or for those that may have more than minimal impacts, additional information may be necessary to complete the evaluation and make a permit decision. Alternative forms of permit applications may be acceptable; contact the Corps for more information.

#### Section 1. Applicant and Landowner Contact information

<u>Applicant</u>: The applicant is the responsible party. If the applicant is an agency, business entity or other organization, indicate the name of the organization and a person that has the authority to sign the application. <u>Authorized Agent</u>: An authorized agent is someone who has permission from the applicant to represent their interests and supply information to the agencies. An agent can be a consultant, an attorney, builder, contractor, or any other person or organization. An authorized agent is optional.

<u>Landowner:</u> Provide landowner information if different from the applicant. The landowner must also sign the application.

### Section 2. Project Information

Provide location information. Latitude and longitude can be found by zooming in to your respective project location and reading off the coordinates displayed on the bottom of the map on Google earth.

Provide information on wetlands and waterways within the project area. Indicate the category of activities that

make up your project.

#### Section 3. Project Purpose and Need

Explain the purpose and need for the project. Also include a brief description of any related activities needed to accomplish the project objectives.

#### Section 4. Description of Resources in Project Area

#### For each wetland, include:

- Whether the wetland is freshwater or tidal, and the Cowardin class and Hydrogeomorphic (HGM) class.
- Source of hydrology and direction of flow (if any).
- Dominant plant species by layer (herb, shrub, tree).
- Refer to wetland delineation report if available, and provide copies to the agency (if not previously provided).
- Describe existing uses, including fish and wildlife use (type, abundance, period of use, significance of site).

#### For rivers, streams, other waterways, lakes and ponds, include a description of, as applicable:

- Streamflow regime (e.g., perennial year-round flow, intermittent seasonal flow, ephemeral event-driven flow). If flow is ephemeral, provide a stream flow assessment or other information that supports your determination.
- Field indicators used to identify the Ordinary High Water Mark (OHWM).
- Channel and bank conditions.
- Type and condition of riparian (streamside) vegetation.
- Channel morphology (structure and shape).
- Stream substrate.
- Assessment of the functional attributes including hydrologic, geomorphic, biological and chemical and nutrient related functions.
- Fish and wildlife (type, abundance, period of use, significance of site).

1 February 2015

#### Section 5. Alternatives to Avoid and Minimize Impacts to Waters

Provide a brief explanation describing how impacts to waters and wetlands are being avoided and minimized on the project site. The alternatives analysis must include:

- Project-specific criteria that are needed to accomplish the stated project purpose.
- A range of alternative sites and designs that were considered with less impact.
- An evaluation of each alternative site and design against the project criteria and a reason for why the alternative
  was not chosen.
- If the project involves fill in an estuary for a non-water dependent use, a description of Alternative non- estuarine sites must be included.

### **Section 6. Project Description**

Overall Description. Provide a brief description of the overall project, including:

- All associated work with the project both outside and within waters or wetlands.
- Include both temporary and permanent work.
- Total ground disturbance for all associated work (i.e., area and volume of ground disturbance).
- Total area of impervious surfaces created or modified by the project, if applicable.

<u>Work within Waters and Wetlands.</u> Provide a description of the proposed work within waters and wetlands, including:

- Each removal or fill activity proposed in waters or wetlands, as well as any construction or maintenance of inwater or over-water structures.
- The number and dimensions of in-water or over-water structures (i.e., pilings, floating docks) proposed within waters or wetlands.

<u>Fill Material and Disposal.</u> Provide a description of fill material and procedure for disposal of removed material, including:

- The source(s) of fill materials (if known).
- Locations for disposal area(s) for dredged material, if applicable. If dredged material is to be discharged on an
  upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material
  back into a waterbody.

<u>Construction Methods.</u> Describe how the removal and/or fill activities will be accomplished including the following:

- Construction methods, equipment to be used, access and staging areas, etc.
- Measures you will use during construction to minimize impacts to the waterway or wetland. Examples may
  include isolating work areas, controlling construction access and using specialized equipment or materials.
  Attach work area isolation and/or erosion and pollution control plans, if applicable.

<u>Construction Timing.</u> Provide the proposed start and completion date for the project. Describe project work that is already complete, if applicable.

<u>Summary of removal and fill activities.</u> Summarize the dimensions, volume and type/composition of material being placed or removed in each waterbody or wetland. Describe each impact on a separate row. For instance, if two culverts are being removed from Clear Creek, use two rows. Add extra rows if needed, or include an attachment.

#### Section 7. Additional Information

Any additional information you provide helps the reviewer(s) understand your project and the other approvals or reviews that may be required. Is the project located within any of the following:

Wetlands, mudflats, vegetated shallows/seagrass beds, coral reefs, riffle and pool complexes?

2 February 2015

#### Section 8. Site Restoration/Rehabilitation and Compensatory Mitigation

<u>Site Restoration/Rehabilitation.</u> For temporary disturbance of soils and/or vegetation in waterways, wetlands or riparian (streamside) areas, discuss how you will restore the site after construction. This may include the following:

- Grading plans to restore pre-existing elevations.
- Planting plans and species list (native species only) to replace vegetation in riparian or wetland areas.
- Maintenance and monitoring plans to document restoration to wetland condition and/or vegetation establishment.
- Associated erosion control for site stabilization.

<u>Compensatory Mitigation.</u> Describe your proposed compensatory mitigation approach, or explain why you believe compensatory mitigation is not required. If proposing permittee-responsible mitigation for permanent impact to wetlands, see 33 CFR 332.4(c) for plan requirements. For permanent impact to waters other than wetlands, 33 CFR 332.4(c) for plan requirements.

#### Section 9. Adjacent Property Owners for Impact and Mitigation Site(s)

Names and addresses for properties that are adjacent to the project site and permittee responsible mitigation site (if applicable), are required. "Adjacent" means those properties that share or touch upon a common property line or are across the street or stream. If more than 5, attach pre-printed labels.

Section 10. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

#### **Section 11. Signatures**

The application must be signed by the responsible party, landowner and agent, as identified in section 1.

#### **Section 12: Attachments**

Project Drawings. A complete application must include a location map, site plan, cross-section drawings and recent aerial photo (See examples). All drawings should be clear, legible and formatted for 8.5 by 11 printing. Larger drawings may be submitted in addition to the 8.5 by 11 size. Use the fewest number of sheets necessary for your drawings or illustrations. While illustrations need not be professionally prepared, they should be clear, accurate, and contain all necessary information, as follows:

#### Location maps (with subject property identified):

- Location map with roads identified
- U.S.G.S. Topographic map
- Tax lot map (with subject tax lot(s) identified)

#### Site plan(s), including:

- Entire project site and activity areas
- Existing and proposed contours
- Location of ordinary high water, wetland boundaries or other jurisdictional boundaries (include wetland delineation report if not previously provided)
- Identification of temporary and permanent impact areas within waterways or wetlands
- Map scale or dimensions and north arrow
- Location of staging areas and construction access
- Location of cross section(s), as applicable
- Location of mitigation area, if applicable

#### Cross section drawing(s), including:

- Existing and proposed elevations
- Identification of temporary and permanent impact areas within waterways or wetlands
- Ordinary high water and/or wetland boundary or other jurisdictional boundaries
- Map scale or dimensions

#### Recent Aerial photo

• 1:200, or if not available for your site, highest resolution possible.

3 February 2015



#### **DEPARTMENT OF THE ARMY**

## HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS FORT SHAFTER, HAWAII 96858-5440

April 4, 2017

SUBJECT: Notice of Complete Pre-Construction Notification and Additional Information Request for the UOG Coral Nursery Projects in Cocos Lagoon and Piti Marine Preserve, Guam; DA File Nos. POH-2017-00049 and POH-2013-00149

Dr. Laurie Raymundo P.O. Box 5401, UOG Station Mangilao, Guam 96923

Dear Dr. Raymundo:

The Honolulu District, U.S. Army Corps of Engineers (Corps), Regulatory Branch is in receipt of your Pre-Construction Notifications (PCNs) dated March 20, 2017 requesting authorization for the proposed construction and deployment of midwater ocean coral nurseries within Cocos Lagoon and Piti Marine Preserve in Guam. We have assigned your projects Department of the Army (DA) File Nos. POH-2017-00049 (Cocos Lagoon Coral Nursery Project) and POH-2013-00149 (Piti Marine Preserve Coral Nursery Project). Please refer to these numbers in all future correspondence related to these projects.

Based on a review of your submittal, we have determined your projects are located within Cocos Lagoon and Piti Marine Preserve which are both located in the Pacific Ocean, a navigable water of the U.S., subject to the regulatory jurisdiction of the Corps. Additionally, we have determined that the proposed coral nursery projects involve structures and/or work in or affecting navigable waters requiring prior authorization from the Corps under Section 10 of the Rivers and Harbors Act of 1899. We have completed review of the information submitted in your PCNs and it appears your proposed work may be eligible for authorization under Nationwide Permit 4 (NWP-4), Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities. We have determined your PCN is complete and complies with NWP General Condition 32(b) and Honolulu District Regional Condition 7. We will now begin evaluating whether your proposed activities meet all applicable NWP terms and conditions, but we will require the following additional information: Please provide the latitude and longitude coordinates (in decimal degree format) for each of the proposed coral nursery locations as depicted on the maps submitted with your DA permit application.

Before authorizing work under our statutory authorities, we must ensure a project complies with applicable federal laws and regulations, such as the Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (MSA), the National Historic Preservation Act, Section 401 of the Clean Water Act and the Coastal Zone Management Act. In most instances, the Corps will coordinate directly with the

appropriate agencies, but we may require additional information from you to complete the coordination and consultation.

Section 401(a)(1) of the Clean Water Act requires that you obtain a Water Quality Certification or waiver from the Guam Environmental Protection Agency (GEPA). For additional information, please contact the please contact the GEPA via telephone at (671) 300-4751/52/53. The Corps cannot verify your project meets the terms and conditions of a NWP until we receive a copy of the 401 WQC or waiver.

Coastal Zone Management Consistency concurrence has been provided for the NWP-4 by the Guam Bureau of Statistics and Plans, Coastal Management Program (GBSP-CMP), so you are not required to obtain an individual consistency determination. GBSP-CMP will be notified about your project via copy of this letter.

Thank you for your cooperation with the Honolulu District Regulatory Program. Should you have any questions related to this determination, please contact me via telephone at (671) 339-2108 or via e-mail at <a href="mailto:Katy.R.Damico@usace.army.mil">Katy.R.Damico@usace.army.mil</a>. You are encouraged to provide comments on your experience with the Honolulu District Regulatory Office by accessing our web-based customer survey form at <a href="http://corpsmapu.usace.army.mil/cm\_apex/f?p=136:4:0">http://corpsmapu.usace.army.mil/cm\_apex/f?p=136:4:0</a>.

Sincerely,

Katy R. Damico Project Manager

Guam Regulatory Field Office

Katy R. Jamico

CC:

Guam Environmental Protection Agency (GEPA)

Guam Bureau of Statistics and Plans, Coastal Management Program (GBSP-CMP)

## MATCH WAIVER REQUEST



Eddie Baza Calvo Governor of Guam

Ray Tenorio
Lieutenant Governor

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932

Tel: (671) 472-4201/3 Fax: (671) 477-1812



Manuel Q. Cruz
Deputy Director

MAY 0 1 2017

Mr. Craig Reid
Grants and External Funding Coordinator
NOAA Coral Reef Conservation Program
Office for Coastal Management
1305 East West Hwy, 10th floor
SSMC4, N/ORM1
Silver Spring, MD 20910

Re: Guam's FY 17-18 Coral Reef Conservation Program Match Waiver Request

Dear Mr. Reid:

The Bureau of Statistics and Plans is requesting a waiver to the matching funds requirement contained in section 6403(b)(2) of the Coral Reef Conservation Act of 2000 in the amount of \$303,949. Guam can provide an in-kind match of \$101,265 for thirty five percent of the Planner I and Chief Planner's time. The Planner I in the Socio Economic Planning Program will be directly involved in assisting in the coordination and implementation of the Support for Public Outreach and Education. The Chief Planner will provide support to the Coral Reef Resilience Coordinator in the implementation of FY 17-18 CRCP Cooperative Agreement such as preparation of the quarterly progress reports, reprogramming request, establishment of the Grant Award, review and compliance with the SACS, and implementation of the programmatic agreement. Although, BSP is showing an in-kind match we are unable to show a cash match and or in-kind match for the \$358,949 due to the following criteria:

- 1. No reasonable means are available through which Guam can meet the matching requirement, and
- 2. The probable benefit of such outweighs the public interest in such matching requirement.

Pursuant to 48 U.S.C. 1469a(d), NOAA shall waive the matching requirement for \$200,000 for each of the proposed FY17 and FY18 State and Territory Coral Reef Conservation Agreement Grant award. The grant requested exceeds the \$200,000 matching funds waiver limit. Section III (B) of the CRCP State and Territorial Coral Reef Conservation Cooperative Agreements Funding Guidance:

1) FY17 requires the submittal of a match waiver request for the additional \$210,403; (\$460,214-\$49,811 in-kind match-\$200,000=\$210,403). Non-federal matching funds have been identified in the program and project entitled, Coral Reef Resilience Coordinator and Support for Public Outreach and Education, respectively.

2) FY18 requires the submittal of a match waiver request for additional \$148,546; (\$400,000-\$51,454 in-kind match-\$200,000=\$148,546) in the final application.

I want to take this opportunity to thank you in advance for your kind and favorable consideration of this request.

Should you require additional information, please contact myself or Ms. Lola E. Leon Guerrero at 671-472-4201/2/3

Sincerely,

AANUEL Q. CRUZ

Deputy Director

## NEGOTIATED INDIRECT COST RATE AGREEMENT



## United States Department of the Interior



INTERIOR BUSINESS CENTER Indirect Cost Services 650 Capitol Mall, Suite 7-400 Sacramento, CA 95814-4706

January 4, 2017

Mr. Jose S. Calvo, Director Bureau of Budget and Management Research Government of Guam P.O. Box 2950 Hagatna, Guam 96932-2950

Dear Mr. Calvo:

Enclosed is the signed original Negotiated Indirect Cost Rate Agreement that was processed by our office. If you have any questions concerning this agreement, please refer to the signature page for the name and contact number of the negotiator.

As a recipient of federal funds, the regulations require you to maintain a current indirect cost rate agreement. For provisional/final indirect cost rates, Indirect Cost Proposals should be submitted on an annual basis, and they are due within six (6) months after the close of your fiscal year. For predetermined rates and approved rate extensions, proposals are due in our office six (6) months prior to the expiration of your current rate agreement. Please note that proposals are processed on a first-in, first-out basis.

## Common fiscal year end dates and proposal due dates are listed below:

Fiscal Year End Date	Proposal Due Date
September 30 <sup>th</sup>	March 31st
December 31st	June 30 <sup>th</sup>
June 30 <sup>th</sup>	December 31st

Please visit our website for guidance and updates on submitting future indirect cost proposals. The website includes helpful tools such as a completeness checklist, indirect cost and lobbying certificates, sample proposals, Excel worksheet templates, and links to other websites.

Sincerely,

Doris W. Jensen

Office Chief (A)

Enclosure

Ref: J:\Other (Territorial)\Guam\Guam Government (Ggovg001)\FY 2016C\Issue.ltr.docx

Phone: (916) 930-3803 Fax: (916) 930-3804

Email: ICS@ibc.doi.gov Website: http://www.doi.gov/ibc/services/finance/Indirect-Cost-Services

## State and Local Governments Indirect Cost Negotiation Agreement

EIN: 98-0018947

#### Organization:

Government of Guam Bureau of Budget and Management Research P.O. Box 2950 Hagatna, Guam 96932-2950 Date: January 4, 2017

Report No(s): 17-A-0363

Filing Ref.:

Last Negotiation Agreement dated November 24, 2015

The indirect cost rates contained herein is for use on grants, contracts, and other agreements with the Federal Government to which 2 CFR Part 200 applies for fiscal years beginning on or after December 26, 2014 subject to the limitations in Section II.A. of this agreement. Applicable OMB Circulars and the regulations at 2 CFR 225 will continue to apply to federal funds awarded prior to December 26, 2014. The rates were negotiated by the U.S. Department of the Interior, Interior Business Center, and the subject organization in accordance with the authority contained in applicable regulations.

Section I: Rate

Page 1 of 2

	Effecti <sup>c</sup>	ve Period			Applicable
Туре	From	To	Rate*	Locations	To
Fixed Carryforward	10/01/15	09/30/16	1.47%	All	AHRD
Fixed Carryforward	10/01/15	09/30/16	38.65%	All	Stats/Plans
Fixed Carryforward	10/01/15	09/30/16	3.60%	All	Agr. (PR/DJ)
Fixed Carryforward	10/01/15	09/30/16	12.61%	All	GBWHC
Fixed Carryforward	10/01/15	09/30/16	8.78%	All	Mil Affairs
Fixed Carryforward	10/01/15	09/30/16	47.07%	All	Parks & Rec.
Fixed Carryforward	10/01/15	09/30/16	26.00%	A11	DPHSS
Fixed Carryforward	10/01/15	09/30/16	40.58%	All	Public Works
Fixed Carryforward	10/01/15	09/30/16	5.35%	All	DISID
Fixed Carryforward	10/01/15	09/30/16	20.25%	All	Youth Affairs
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	CAHA
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Energy
Fixed Carryforward	10/01/15	09/30/16	9.81%	All	GEPA
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Library
Fixed Carryforward	10/01/15	09/30/16	0.31%	All	Governor
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Child Support
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Crime Victims
Fixed Carryforward	10/01/15	09/30/16	5.86%	All	DRT
Fixed Carryforward	10/01/15	09/30/16	0.00왕	All	Police
Fixed Carryforward	10/01/15	09/30/16	4.32%	All	Labor
Fixed Carryforward	10/01/15	09/30/16	8.80%	All	Homeland Sec.

\*Base: Total direct salaries and wages, excluding fringe benefits. The rate applies to all programs administered by the non-federal entity. To determine the amount of indirect costs to be billed under this agreement, direct salaries and wages should be summed and multiplied by the rate. All other program costs, including fringe benefits associated with direct salaries and wages, should be eliminated from the calculation.

Treatment of fringe benefits: Fringe benefits applicable to direct salaries and wages are treated as direct costs; fringe benefits applicable to indirect salaries and wages are treated as indirect costs.

#### Section II: General

Page 1 of 2

- A. Limitations: Use of the rate(s) contained in this agreement is subject to any applicable statutory limitations. Acceptance of the rate(s) agreed to (1) no costs other than those herein is predicated upon these conditions: incurred by the subject organization were included in its indirect cost rate (2) all such costs are the legal obligations grantee/contractor, (3) similar types of costs have been accorded consistent treatment, and (4) the same costs that have been treated as indirect costs have not been claimed as direct costs (for example, supplies can be charged directly to a program or activity as long as these costs are not part of the supply costs included in the indirect cost pool for central administration).
- B. Audit: All costs (direct and indirect, federal and non-federal) are subject to audit. Adjustments to amounts resulting from audit of the cost allocation plan or indirect cost rate proposal upon which the negotiation of this agreement was based will be compensated for in a subsequent negotiation.
- C. Changes: The rate(s) contained in this agreement are based on the organizational structure and the accounting system in effect at the time the proposal was submitted. Changes in organizational structure, or changes in the method of accounting for costs which affect the amount of reimbursement resulting from use of the rate(s) in this agreement, require the prior approval of the responsible negotiation agency. Failure to obtain such approval may result in subsequent audit disallowance.

#### D. Rate Type:

- 1. Fixed Carryforward Rate: A fixed carryforward rate is based on an estimate of the costs that will be incurred during the period for which the rate applies. When the actual costs for such periods have been determined, an adjustment will be made to the rate for future periods, if necessary, to compensate for the difference between the costs used to establish the fixed rate and the actual costs.
- 2. Provisional/Final Rates: Within six (6) months after year end, a final indirect cost rate proposal must be submitted based on actual costs. Billings and charges to contracts and grants must be adjusted if the final rate varies from the provisional rate. If the final rate is greater than the provisional rate and there are no funds available to cover the additional indirect costs, the organization may not recover all indirect costs. Conversely, if the final rate is less than the provisional rate, the organization will be required to pay back the difference to the funding agency.
- 3. Predetermined Rate: A predetermined rate is an indirect cost rate applicable to a specified current or future period, usually the organization's fiscal year. The rate is based on an estimate of the costs to be incurred during the period. A predetermined rate is not subject to adjustment. (Because of legal constraints, predetermined rates are not permitted for Federal contracts; they may, however, be used for grants or cooperative agreements.)

- E. Rate Extension: Only final and predetermined rates may be eligible for consideration of rate extensions. Requests for rate extensions of a current rate will be reviewed on a case-by-case basis. If an extension is granted, the non-Federal entity may not request a rate review until the extension period ends. In the last year of a rate extension period, the non-Federal entity must submit a new rate proposal for the next fiscal period.
- F. Agency Notification: Copies of this document may be provided to other federal offices as a means of notifying them of the agreement contained herein.
- G. Record Resping: Organizations must maintain accounting records that demonstrate that each type of cost has been treated consistently either as a direct cost or an indirect cost. Records pertaining to the costs of program administration, such as salaries, travel, and related costs, should be kept on an annual basis.
- H. Reimbursement Ceilings: Grantee/contractor program agreements providing for ceilings on indirect cost rates or reimbursement amounts are subject to the ceilings stipulated in the contract or grant agreements. If the ceiling rate is higher than the negotiated rates in Section I of this agreement, the negotiated rates will be used to determine the maximum allowable indirect cost.
- I. Use of Other Rates: If any federal programs are reimbursing indirect costs to this grantee/contractor by a measure other than the approved rate(s) in this agreement, the grantee/contractor should credit such costs to the affected programs, and the approved rate(s) should be used to identify the maximum amount of indirect cost allocable to these programs.
- J. Central Service Costs: If the proposed central service cost allocation plan for the same period has not been approved by that time, the indirect cost proposal may be prepared including an amount for central services that is based on the latest federally-approved central service cost allocation plan. The difference between these central service amounts and the amounts ultimately approved will be compensated for by an adjustment in a subsequent period.

#### K. Other:

- 1. The purpose of an indirect cost rate is to facilitate the allocation and billing of indirect costs. Approval of the indirect cost rate does not mean that an organization can recover more than the actual costs of a particular program or activity.
- 2. Programs received or initiated by the organization subsequent to the negotiation of this agreement are subject to the approved indirect cost rate(s) if the programs receive administrative support from the indirect cost pool. It should be noted that this could result in an adjustment to a future rate.
- 3. Indirect cost proposals must be developed (and, when required, submitted) within six (6) months after the close of the governmental unit's fiscal year, unless an exception is approved by the cognizant agency for indirect costs.

## Section III: Acceptance

Listed below are the signatures of acceptance for this agreement:

By the State & Local Government:

Government of Guam

State/Local Government

Signature JOSE S. CALVO

Name (Type or Print)

DIRECTOR

Title

11.23.16

Date

By the Cognizant Federal Government Agency:

U.S. Department of the Interior

Agency

Signature

Deborah A. Mober

Name

Office Chief (A)

Office of Indirect Cost Services

Title

U.S. Department of the Interior

Interior Business Center

Agency

JAN 0 4 2017

Date

Negotiated by Marilyn P. Elgar Telephone (916) 930-3811

## DATA AND INFORMATION SHARING PLAN

#### **Guam Data and Information Sharing Plan**

# 1. Type of environmental data and information to be created during the course of the project

Critical coral reef monitoring data, including data for water quality, benthic habitat and associated biological community parameters, are collected on an annual to biennial basis at several priority reef areas around Guam. The bulk of the data generated include field observations and digital images; a limited number of spatial data layers are generated, including site boundaries and transect locations. The data collected enable coral reef managers to determine the status and trends in selected coral reef ecosystem indicators and to inform the effective management of Guam's coral reef resources.

#### 2. The types of collection methods

The data are collected using a stratified random sampling design and the combined use of both fixed and non fixed sampling stations. Monitoring sites are located at reef areas designated as high priority by reef managers. Site boundaries are determined using remotely sensed data and in situ observations, with the aim of minimizing habitat variability within the site. The locations of sampling stations are generated randomly within the site boundaries using a Geographic Information System (GIS). Data collection is carried out by University of Guam biologists, including the Monitoring Coordinator and technical staff, as well as the NOAA PIRO Coral Reef Ecologist for Guam. Field surveys include photo transects for benthic cover, chain length method for rugosity, quadrats for coral colony size/ condition, stationary point count method for the reef fish community, and belt transects for the macro invertebrate community. Water temperature data is recorded using data loggers installed at most sites. Additional water quality data will be collected using temperature/conductivity loggers and multiparameter datasondes.

#### 3. Tentative date by which data will be shared

The fish, coral, and macroinvertebrate data are entered into the Guam Coral Reef Monitoring database by the observer within two weeks after collection. To ensure data integrity all database records are compared against the raw data by the Coral Reef Monitoring Technician or the Monitoring Coordinator; this quality control process will be completed within 6 weeks of data collection. The quality-controlled macroinvertebrate, reef fish, and coral quadrat data will be available within two months after data collection. In order to generate benthic cover estimates the photo transect images are analyzed using the program CPCe. Image analysis will be completed within 4 months of data collection. Upon completion of the image analysis, output files generated by the application are automatically added to the data management system using an ingestion script developed by the NOAA Coral Reef Ecosystem Program. Updates to existing metadata and the development of new metadata for the fish, coral quadrat, and macroinvertebrate data will be submitted to CoRIS within 10 weeks of data collection, and within five months after collection of the photo transect images.

#### 4. Standards to be used for data/metadata format and content

Field survey and data management protocols have been developed in order to facilitate consistency and maintain a high degree of data integrity. Field observation data are stored in a remotely-accessible relational database that requires a quality analysis/quality control process to be carried out before data entry is considered final. Metadata for field observation data, geospatial datasets, and associated metadata are developed using standards set out in the document "Technical Guidelines for Metadata Preparation" and Federal Geographic Data Committee standards.

#### 5. Policies addressing data stewardship and preservation

Collected data collected are stored within a r elational database at the Department of Administration's Data Services Division. A backup of the contents of the virtual server (e.g., the relationship database, the web application, and related applications and data) is housed off-site. Copies of the relational database are obtained by NOAA CREP on a regular basis in order to ensure that a current backup of the database is housed at an off-island location.

#### 6. Procedures for providing access to data and prior experience in publishing such data:

Data are not currently available online, and plans to develop an online data sharing application have been halted due to the lack of funding. As a result, data can currently only be obtained upon request. Data discovery is facilitated through CoRIS, to which metadata records for each dataset are submitted. It is not clear if a web-based data sharing application will eventually be developed. The Monitoring Program Coordinator will continue to communicate with NOAA CREP staff. Once a data sharing component of the web application is developed, end users will be able to discover data sets through internet searches and download data sets via the web application; links to the web application will be provided on the monitoring program website, University of Guam Marine Laboratory website, the Guam Bureau of Statistics and Plans website, and other websites to widen internet exposure.

The results of analyses of data collected at the long-term monitoring sites and other data collected by the monitoring program are included in technical reports submitted to NOAA. Although the data collected from the long-term monitoring sites have not yet been used in peer reviewed studies, coral bleaching response data collected by members of the monitoring team have been used in a master's thesis and in a recently published peer reviewed article. Additional peer-reviewed articles are in prep or planned, including analyses of data collected at the long-term monitoring sites. All relevant information gathered through Monitoring Program efforts will also be incorporated into the Guam chapter of the next NOAA Status of the Coral Reef Ecosystems of the U.S. and Freely Associated States report. This information will also be presented in newsletters, such as the *Man, Land, and Sea newsletter*, blogs, social media, and will be incorporated into a variety of other outreach and education efforts.

## NEPA QUESTIONS AND RESPONSES

#### **NEPA QUESTIONS**

#### **Comprehensive Long Term Monitoring at Permanent Sites on Guam**

**Question C1.** Is the proposed activity going to be conducted in partnership with NOAA or would the proposed activity require NOAA's direct involvement, activity, or oversight? If yes, describe NOAA's involvement, activity, or oversight, including the name of the office or program that is involved.

The program is funded in its entirety through the NOAA Coral Reef Conservation Program, and a key member of the monitoring team is a Coral Reef Ecologist with the NOAA Pacific Islands Regional Office – Guam Field Office. The program has received technical support from the NOAA Coral Reef Ecosystem Program, and will likely continue to receive technical support CREP.

**Question C2.** Would the proposed activity involve any other Federal agency(ies) partnership, direct involvement, activity, or oversight? If yes, provide the name(s) of the agency(ies) and describe its involvement, activity, or oversight.

No.

**Question D1.** Provide a brief description of the location of the proposed activity. The location of the scientific research project activity and non scientific activity is as follows:

Coral reef surveys are carried out on a regular basis at high priority reef areas around Guam, including Tumon Bay, East Agana Bay, Piti Bay, Western Shoals (Apra Harbor), Fouha Bay, Achang Bay, and Cocos Barrier Reef. Surveys are restricted to the seaward reef slope at depths between 7 and 15 meters for the Tumon, East Agana, Piti, Achang, and Cocos sites; surveys are carried out at various depths and across multiple reef zones at the Fouha Bay and Western Shoals sites. Surveys are carried out at multiple sampling stations within the boundaries of each site. Approximately half of these sampling stations are permanently marked and are re-randomized for each sampling year. Surveys are carried out along a single 25 m transect at each sampling station. Surveys include photo transects for benthic cover, quadrats for coral colony size/condition, belt transect for commercially and ecologically important macroinvertebrates, and stationary point counts for reef fish.

**Question E1.** List any Federal, state, or local permits, authorizations, or waivers that would be required to complete the proposed activity. Provide the date the permit, authorization, or waiver was obtained or will be obtained. Provide copies of the permit, authorization, or waiver as appropriate. Was a NEPA analysis prepared for the permit, authorization, or waiver? If yes, state the title of the NEPA analysis and provide copies of the NEPA analysis.

 USACE Nationwide Permit No. 5, Scientific Measurement Devices; 20 July 2010; File No. POH-2010-00118 (Tumon)

- USACE Nationwide Permit No. 5, Scientific Measurement Devices; 16 November 2010; File No. POH-2010-00257 (East Agana)
- USACE Nationwide Permit No. 5, Scientific Measurement Devices; 13 December 2011; File No. POH-2011-00329 (Piti and Western Shoals)
- USACE Nationwide Permit No. 5, Scientific Measurement Devices; 13 March 2015; File No. POH-2015-00018 (Achang), POH-2015-00022 (Cocos-East), POH-2015-00023 (Fouha)
- Guam Department of Agriculture Division of Aquatic and Wildlife Resources Special Permit for Scientific Collection in MPA Guam; 1 February 2015
- Endangered Species Act Section 7 consultation with the National Marine Fisheries Service; 12 July 2010
- Guam Coastal Management Program Federal Consistency determination; 9 November 2009
- Guam Coastal Management Program Federal Consistency determination; 12 February 2015
- Guam Historic Preservation Office Section 106 consultation; 22 January 2015

A NEPA Checklist for Proposed Actions (attached) was prepared by the NOAA Coral Reef Conservation Program, with review by the Guam Long-term Monitoring Program Coordinator, in March 2010. It was determined that the proposed action fell within the Coral Reef Conservation Grants Program Programmatic Environmental Assessment and required no further environmental review.

**Question F1**. Is there the potential for the proposed activity to cause changes that would be different from normal ambient conditions (for example, temperature, light, turbidity, noise, other human activity levels, etc.)? If yes, describe the changes and the circumstances that would cause these changes.

No.

## GUARDIAN OF THE REEF SURVEY INSTRUMENT

#### **Guardians of the Reef Program- Presentation Evaluation**

Scale: 5 = Excellent, 4=Good, 3=Satisfactory, 2=Needs Improvement, 1=Poor

Presentation Skills: Evaluate ALL presenters together as a whole	Circle the appropriate rating				
Clearly communicates the subject matter	5	4	3	2	1
2. Uses visuals appropriately	5	4	3	2	1
3. Validates students' questions and comments	5	4	3	2	1
4. Remains focused on topic	5	4	3	2	1
5. Actively engages audience	5	4	3	2	1
6. Well Organized	5	4	3	2	1
Overall Impression	5	4	3	2	1

- 1. How many students are in your class today?
- 2. Did you prepare your students prior to the scheduled presentation on topics related to corals, coral reef ecosystems, sedimentation/erosion or any other environmentally related topics?

If yes, which topics did you discuss?

- 3. Did the Guardians provide your class with any materials (i.e. handouts/Guardians of the Reef Pledge Card)? Do you expect these to be useful?
- 4. How can we better align Guardians of the Reef with your curriculum, the common core, or other standards your students are responsible for learning?
- 5. Do you have any feedback regarding the scheduling process for Guardians of the Reef? (i.e. the timeframe, time of year, establishing steady POC's)
- 6. Would you recommend Guardians of the Reef to other educators?
- 7. Please share any additional comments regarding the Guardians of the Reef program constructive criticism is encouraged!

## RESUME AND OR CURRICULUM VITAE

## ANNA ELLINGBOE SIMEON

Driven and personable up-and-coming biologist with 5+ years of experience executing research and field work in many challenging environmental conditions. Passionate about conservation and a fantastic presenter with extensive teaching, organizational, and outreach experience.

Skills & Abilities	In-depth knowledge of Guam's natural resources and local conservation initiatives (Coral Reef Initiative, Micronesia Biosecurity Plan, Micronesia Challenge, etc.)  Top-notch presenter and collaborator with exceptional communication skills  Adept at collecting, compiling, and organizing environmental data  Experienced analyzing data using GIS, R, and Excel				
Education	University of Guam	Graduated December 2016			
	Masters of Science - biology				
	University of California, San Diego	Graduated June 2009			
	Bachelor of Science – Ecology, Behavior, and Evolution				
	Sea Education Association	October 2007 – January 2008			
	Oceans and climate program – Class 2014				
Select Relevant Courses * = UOG † = UCSD	Advanced Statistical Methods*	Environmental Challenges:			
	Advances in Ecology*	Science and Solutions <sup>†</sup>			
	Biometry <sup>†</sup>	GIS for Scientists and Engineers <sup>†</sup>			
	Conservation and the Human Predicament <sup>†</sup>	Marine Botany*			
	Economics of the Environment <sup>†</sup>	Marine Invertebrate Ecology <sup>†</sup>			
	Environmental Biology and Ecology*	Ocean Science and Policies <sup>†</sup>			
Experience	Biologist: Coral Reef Watershed Coordinator  Bureau of Statistics and Plans, Government of Guam  Work with federal and local partners to develop conservation projects for the Manell-Geus watershed and surrounding reefs in Southern Guam				
	Lead and coordinate invasive bamboo removal project to address flooding problems in Merizo village  Co-manage fire break construction around forest restoration projects				
	Lead tours of different reefs, rivers, and forests to the public for outreach purposes				

#### Experience Cont. Environmental Consultant

May 2015 - Present

Self-Employed through Sole Proprietorship

Work with local partners to complete a variety of projects including genetic sequencing and analysis, benthic image analysis, and many kinds of terrestrial and marine field surveys

Research Assistant

January 2011 - Present

University of Guam Marine Laboratory - Lab of Dr. Tom Schils

Collect data and install instruments via SCUBA and snorkeling

Analyze large datasets and genetic information for Sea Grant Invasive Species Project

Organize and maintain UOG Marine Herbarium (14,000+ specimens)

Monitor water quality from sewage outfalls by monthly water sampling

Monitor reef health through surveys for Department of Defense CESU grant

#### Internship

#### October 2010 - December 2010

CARMABI Research Station, Curação, Netherland Antilles

Coordinated travel and research logistics with 10 other researchers

Collected reef monitoring data by transect sampling, underwater photography, and water testing

Maintained various research equipment and operated small skiffs

#### Marine Science and Watersports Instructor

January 2009– August 2010

Mission Bay Aquatic Center - San Diego, California

Managed classes and summer camp programs for children and adults of all ages Taught school-aged kids about local ecology and watershed importance for coastal communities

Developed and implemented new lesson plans and activities for summer camp Maintained and replaced equipment as necessary

#### **Teaching Assistant**

January - June 2009

Conservation and the Human Predicament, UCSD

Introduction to Biological Oceanography, UCSD

Prepared course materials and led discussion sessions with 30+ university students Coordinated with instructor and TA's about scheduling and course material logistics

Developed, assigned, and evaluated coursework

#### Senior internship

**January 2009 – June 2010** 

Scripps Institution of Oceanography – Conducted with Dr. Stuart Sandin and Dr. Debbie Szmarzly

Compiled all published data regarding energy flow through coral ecosystems Converted all data to comparable format and analyzed to determine whole-reef estimates of energy dynamics within reef ecosystems

Used new information to design and update exhibit information for Birch

### Aquarium

Volunteer Assistant Aquarist

**January 2008 – August 2008** 

Birch Aquarium at Scripps - San Diego, California

Interacted with visitors and encouraged ocean conservation through exhibit interpretation

Coordinated with head aquarists to design and build new habitats and improve water systems

Maintained aquaria and inhabitants

Student / Assistant Scientist

October 2007 – January 2008

Sea Education Association – Woods Hole, Massachusetts

Gathered and analyzed data for a wide variety of studies and projects Gained extensive experience in oceanographic field research techniques

Lived six weeks on board 135' research sailing ship SSV Robert C. Seamans

## Presentations and Outreach

2016 International Coral Reef Symposium

Presented thesis research about Micronesia algae genetic diversity and biogeography

National Park Service "Science Sunday" Series - March 2014

Invited to speak about the role of algae on Guam's coral reef ecosystems and my research, focusing on invasive species detection and new species discovery using genetic techniques

SeaGrant Website - November 2013

Article accepted for national NOAA SeaGrant website: "Hide and Seek: Unearthing Micronesia's Lurking Invaders" (View at: http://goo.gl/JmQ2Bc)

2013 Pacific Islands Environment Conference: Guam Coral Reef Symposium

Hyatt Regency, Tumon, Guam

Presented poster entitled: "Unrecognized Algal Diversity in the Western Pacific: A Case Study of the Genus *Actinotrichia*"

### Presentations and Outreach continuation

2012 Symposium for Human Well-Being and the Marine Environment in the Pacific

University of the Ryukyus, Okinawa, Japan

Presented research: "Using DNA barcoding to discover cryptic diversity in potential invasive species"

Ongoing – Organizing and leading tours of Marine Lab

*University of Guam – Marine Laboratory* 

Coordinate with various organizations and graduate students to provide educational tours of the UOG Marine Laboratory to on- and off-island groups

Leadership	Site Coordinator for International Coastal Cleanup in 2012, 2013, and 2014 President of Board of Directors for Poksai canoe club
	Spearheaded fundraising campaign among local paddling teams to allow Yap National Team to participate in 2014 Micronesian Cup
	Continuing coordination to provide UOG Marine Lab tours to public
	Coordinated speaker schedules for UOG POETS Seminar series in 2012
Additional	PADI Advanced Diver with 250+ dives logged
Certifications	Emergency First Responder: CPR/AED/First Aid (expires October 2015)
	Emergency Oxygen Provider (expires October 2015)
	California Safe Boating certificate (completed in 2009)

#### Whitney C. Hoot

PO Box 5009 Mangilao, Guam 96923 whitney.hoot@gmail.com 671-686-1699

#### **Research interests**

Coral reef restoration; trophic interactions on coral reefs; marine protected area establishment and management; biotic and abiotic factors influencing coral bleaching susceptibility

#### **Education**

MS, conservation biology with concentration in marine science (GPA 3.81), University of Maryland, College Park (2015)

- Capstone: Restoring dynamite blasted reefs with transplanted alcyonaceans
- University Teaching and Learning Program (Associate level)

BA, sociology with minor in environmental science (GPA 3.58), Barnard College, Columbia University (2010)

- Thesis: Youth, the environment, and online networks: How local cyber-communities reflect the public sphere
- Athena Leadership Scholars Program

Other coursework:

- Intro to Tropical Biology, 4 grad credits, Organization for Tropical Studies, University of Costa Rica (2015)
- Cities in the 21<sup>st</sup> Century, 16 undergrad credits, International Honors Program (2008)
- Summer Ecosystem Experience for Undergraduates, 6 undergrad credits, Columbia University (2008)

GRE: 168 verbal, 98<sup>th</sup> percentile; 158 math, 74<sup>th</sup> percentile; 6.0 writing, 99<sup>th</sup> percentile (2012)

#### **Professional experience**

NOAA National Coral Reef Management Fellow

Jan 2016 – Present

Bureau of Statistics and Plans, Government of Guam

 Primary duties include writing and implementing the island-wide Guam Coral Reef Resilience Strategy; coordinating the Guam Coral Reef Response Team and developing response plans to address acute threats to Guam's reefs; and collecting and analyzing data on coral bleaching impacts.

Temporary Research Associate, Seascapes Program

Apr 2015 – May 2015

Conservation International, Virginia

• Conducted research on novel technologies for MPA management and enforcement and produced an in-depth cost analysis of using unmanned aircraft for MPA surveillance.

Coral Reef Ecology and Data Analysis Intern

Jun 2014 – Sep 2014

World Wildlife Fund, Washington DC

 Analyzed benthic and fish data collected during baseline surveys of two Indonesian MPAs and prepared a technical report on monitoring methods and survey results.

Citizen Science Outreach Coordinator

Jan 2013 – Jul 2013

Smithsonian Environmental Research Center, Maryland

• Recruited, trained, and managed public participants in environmental research projects and assisted in planting 20,000 trees in the first large-scale experimental tree plantation in the USA.

Program Officer; Climate Adaptation, Disaster Risk Reduction, and Education Program Sep  $2011-Aug\ 2012$ 

International Organization for Migration, Micronesia

Educated over 3,000 students and educators on climate adaptation and hazard awareness; recruited and supervised three staff members; prepared the final report to USAID following the pilot project; and developed a 3-year work plan for the AusAID funded \$3 million expansion of the program in the Federated States of Micronesia and the Republic of the Marshall Islands.

Policy and Communications Intern

May 2011 - Jul 2011

Conservation Society of Pohnpei, Micronesia

Built a vision and structure for CSP's new policy program; improved communication strategies
within the education program; and assisted in preparation of a successful \$150,000 proposal to
the Packard Foundation.

Research/Communications Intern

Sep 2009 – Jul 2010

Brighter Green, New York

• Conducted research for publications on climate change, agriculture, and global food security; wrote blog posts; and produced white papers using Adobe InDesign.

#### Volunteer experience

Visiting Researcher and Reef Restoration Volunteer

Jun 2015 – Jul 2015

Tropical Research and Conservation Center, Malaysia

 Designed and conducted an independent experiment evaluating the use of transplanted alcyonaceans to stabilize rubble slopes; trained volunteers in scientific diving and lectured on coral reef ecology; developed skills in artificial reef construction, coral transplantation, PIT survey methods, and fish and benthic ID.

Researcher and Grant Writer

Aug 2011 – Aug 2015

Island Research and Education Initiative, Micronesia

 Contributed research and writing to books and other educational materials focused on the natural environments of Micronesia and wrote proposals to fund a project to preserve endangered languages.

#### **Teaching experience**

**Teaching Assistant** 

Aug 2014 – Dec 2015

College of Agriculture and Natural Resources, University of Maryland, College Park

Developed innovative lessons for ENSP 101: Intro to Environmental Science and ENSP 102: Intro to Environmental Policy; led weekly discussion sessions each semester with 20-25 students per section; lectured 125-175 students on oceanography, marine biology, marine pollution, and policy topics.

Volunteer High School Teacher (WorldTeach)

Jul 2010 – Jun 2011

Pohnpei Island Central School, Micronesia

• Taught Algebra II to three classes of 30+ high school seniors each semester; developed lesson plans and hands-on activities using the 5E model; and co-founded the College Prep Program.

#### Additional teaching and outreach experience

Docent, Sant Ocean Hall, Smithsonian Natural History Museum, Washington DC

Feb 2015 – Nov 2015

Snore and Roar Tour Guide, Smithsonian National Zoo, Washington DC

Jun 2014 – Aug 2014

K-5 Science Instructor, Hands On Learning Services, Maryland

Oct 2012 - Dec 2015

Advanced Reading Instructor, Upward Bound Program, Micronesia

Nov 2010 – May 2011

Senior Math Tutor, Upward Bound Program, Micronesia

Nov 2010 – May 2010

Teaching Assistant, Environmental Science I and II, Barnard College, New York

Sep 2009 – May 2010

#### **Mentoring**

Masters committee: Nicole M. Burns, MS candidate in biology (expected 2017), University of Guam

• Thesis: Using resilient populations to mitigate bleaching mortality of staghorn *Acropora* 

Masters committee: Marylou K. Staman, MS in biology (2016), University of Guam

• Thesis: Nesting patterns of the green sea turtle (*Chelonia mydas*) on Andersen Air Force Base, Guam

Co-mentor for NOAA Hollings intern: Alexis Sturm, BS candidate in biology (expected 2017), University of Miami

Project: Examining coral disease and physical damage along human use gradients in Tumon Bay,
 Guam

#### **Publications and reports**

Semmler R, **Hoot WC**, Reaka ML (2016) Are mesophotic coral ecosystems distinct communities and can they serve as refugia for shallow reefs? *Coral Reefs*. doi: 10.1007/s00338-016-1530-0

Spivy AL, **Hoot WC**, Hart DE, Sykora-Bodie S, Panuncio M, and Fish M (2014) Prioritization of marine turtle nesting beaches in the Wider Caribbean. Final report to the World Wildlife Fund. 87 p

#### **Professional meetings**

13th International Coral Reef Symposium: Bridging science to policy, Hawaii (2016)

Poster: Stabilizing dynamite-blasted reefs with transplanted alcyonaceans

Save Our Reefs: Reef Safe Tour Operator Meeting, Guam Coral Reef Initiative, Guam (2016)

- Presented an intro to coral reef ecology and an overview of the Eyes of the Reef Program
- 36<sup>th</sup> US Coral Reef Task Force Meeting, Guam (2016)
  - Meeting participant

Coral Bleaching Symposium, Bureau of Statistics and Plans, Guam (2016)

- Meeting organizer; presented an introduction of the Guam Coral Reef Response Team, overview of the Coral Bleaching Response Plan, and tutorial for use of NOAA Coral Reef Watch products 7<sup>th</sup> Annual Island Sustainability Conference: Islanded Communities, Center for Island Sustainability, Guam (2016)
  - Meeting participant

Understanding ecological and social resilience in island systems: Informing policy and sharing lessons for management, Center for Biodiversity and Conservation, American Museum of Natural History, New York (2013)

• Poster: The abandonment of Sorol

Shrinking, sinking, resurfacing: Small islands and natural hazards in historical and current perspectives, Rachel Carson Center for Environment and Society, Ludwig Maximilian University of Munich, Germany (2012)

• Oral: The abandonment of Sorol: The first complete depopulation of a Micronesian atoll in modern history

Australia Pacific Partnership for Development Annual Bilateral Talks in the Republic of the Marshall Islands and Federated States of Micronesia, Marshall Islands (2012)

- Presented on the expansion of IOM's CADRE program in these two countries Federated States of Micronesia Annual Public Health and Hospital Emergency Preparedness Summit, Chuuk (2012)
  - Presented on the CADRE program and its connections to public health

World People's Conference on Climate Change, Bolivia (2010)

• Panelist: Environmental impacts of industrialized agriculture in India

### **Awards and honors**

NOAA National Coral Reef Management Fellowship (2016 – 2018)

Dr. Devra Kleiman Memorial Graduate Award, Department of Biology, University of Maryland, \$5000 (2015)

Rowe Family Foundation Scholarship Fund, Organization for Tropical Studies, \$200 (2015)

Japan Travel Program for US Future Leaders, Japan Foundation Center for Global Partnership (2014)

Maryland School of Public Policy Internship Award, University of Maryland, \$2500 (2014)

Graduate School Special International Travel Award, The Graduate School, University of Maryland, \$500 (2014)

Travel Award, College of Computer, Mathematical, and Natural Sciences, University of Maryland, \$800 (2014)

Department of Biology Travel Award, University of Maryland, \$300 (2014)

Sustainable Development and Conservation Biology Alumni Fund Award, University of Maryland, \$300 (2014)

State of Maryland Delegate Scholarship Awards, \$3900 (2013, 2014, 2015)

Seward Scholarship for Leadership, National Alpha Delta Phi Society (2008, 2009)

Barnard Student Leadership Award, Barnard College, Columbia University (2008, 2009)

#### Skills and certifications

Software/statistical methods: ArcGIS, JMP, R, SigmaPlot, Excel, Microsoft Access, ImageJ, Adobe Photoshop

Ecological survey methods: Line intercept transects, point intercept transects, coral quadrats, timed swims and belt transects for coral diversity, coral disease and other health impacts, and macroinvertebrates PADI Divemaster (2016)

PADI Emergency Oxygen Provider (2016)

Emergency First Responder, primary and secondary (2016)

Teaching English as a Foreign Language certification (2010)

#### **Training and workshops**

Coral Reef Report Card Workshop, NOAA Coral Reef Conservation Program, Guam (2017)

Results Based Accountability Training, NOAA Fisheries and Clear Impact LLC, Guam (2016)

Participatory GIS Mapping Workshop, NOAA Office for Coastal Management, Guam (2016)

Project Design and Planning for Meaningful Evaluation Training, NOAA Office for Coastal Management, Guam (2016)

Coral Identification Workshop, Coral Identification Capacity Building Program and BYOGuides, Honolulu (2016)

Intro to Reef Resilience and Advanced Studies in Reef Resilience, The Nature Conservancy, online courses (2016)

Oceania Regional Response Team/US EPA Abandoned and Derelict Vessel Workshop, Guam (2016) Guam Coastal Climate Change Resilience Workshop, University of Guam Marine Laboratory, Guam (2016)

Community Based Disaster Risk Management, Earthquakes and Megacities Initiative, online course (2012)

Climate Change Adaptation Outreach and Planning Training, Micronesia Conservation Trust and the Pacific Islands Climate Education Partnership, Pohnpei (2012)

Community Partnerships for Climate Change Education and Adaptation Workshop, Pacific Islands Climate Education Partnership, Pohnpei (2011)

#### **Science communication**

Newspaper articles:

- With the help of a tiny robot, scientists deepen support for a Mariana Trench sanctuary (goo.gl/ZP4eQW)
- Bringing back our birds: Small wins add up in the battle against brown tree snakes (goo.gl/ygeYS7)
- A Guam without coral reefs: Can Guam's coral reefs survive climate change? (goo.gl/Ahzvdo)

### Blog posts:

- Understanding the maturity gradient in environmental science and management (goo.gl/EEFDX0)
- Meditations in a premontane rainforest (goo.gl/CZHSE3)

#### Podcast:

 Co-wrote and produced: Potentially treacherous science adventures with Liz and Whitney (goo.gl/F8GRlo)

#### SUMMARY OF QUALIFICATIONS

- Coordinates Government of Guam's long-term coral reef monitoring program
- Supervises four biologists
- Multiple years of experience working with various Government of Guam and federal natural resource management agencies and non-governmental organizations on a range of coastal resource management issues
- Extensive training and experience with coral reef research design, survey techniques, and data analysis
- Expert knowledge of Guam's coral reefs and other reefs in the region, including condition and threats, identification of coral species, reef fish species, and other reef-associated organisms
- Carries out coral reef assessments on Guam and other locations in Micronesia as part of local, regional, and federal teams of professional scientists
- Graduate training in marine science and environmental policy/economics; specific training in coral reef ecology and coral reef management
- Specialist in scleractinian coral taxonomy
- Experience teaching Introduction to Marine Biology course and Introductory, Advanced, and Special Topics in Geographic Information System courses at Guam Community College
- Experience applying GIS tools/remote sensing data to coastal management issues on Guam
- Experience teaching spatial technology concepts and skills to users of various experience levels
- Experienced PADI Divemaster with more than 1600 dives
- Possesses Dept. of Interior/NOAA Motorboat Operator Certification, including Open Water module training
- Exceptional writing and verbal communication skills

#### **EDUCATION**

• M.S. in Environmental Studies, 3.9/4.0 GPA

The Graduate School at the College of Charleston, SC

• B.A., Major in Biology, 3.61/4.0 GPA *Hiram College, Hiram, OH* 

May, 1999

May, 2006

## RECENT WORK EXPERIENCE

Research Associate III, University of Guam Marine Lab, Guam, Oct. 1, 2013 - Present

- Primary responsibilities include coordinating Guam's Long-term Coral Reef Monitoring Program and providing technical support to Government of Guam natural resource agencies in coral reef monitoring and management-related matters
- Additional responsibilities include participation in the Guam Coral Reef Rapid Response Program, including the development of response plans for groundings, spills, coral bleaching, storms, coral disease outbreaks, and *Acanthaster planci* outbreaks, as well as participating in assessments and monitoring with the Rapid Response Team after disaster events.
- Coordination of Guam long-term coral reef monitoring program involves supervising a full-time NOAA technical support specialist and three part-time monitoring assistants (all of whom are biologists; usually seeking graduate degree in marine biology); coordinating development of updated monitoring strategy; developing federal grant proposals, including development of program budget; procurement of equipment and supplies; directing, and participating in, coral reef surveys; carrying out and/or supervising data analysis; publishing reports detailing results of monitoring program; designing and carrying out research projects associated with monitoring program; providing recommendations for management actions based on results of monitoring program; and conducting outreach and education activities related to monitoring program, such as classroom visits, festival participation, radio and television appearances, and contributing articles to printed media
- Technical support provided to Government of Guam natural resource agencies involves the review of

Environmental Impact Assessments, Federal Consistency Applications, and other environmental documents; providing scientific advice when requested and assisting in development of coral reef management strategies and policies; providing technical support and guidance for various GIS projects; and participating in education and outreach activities

- Conducted coral community surveys at numerous sites around Guam as part of a University of Guam-led effort to document a severe coral bleaching event; approximately 36 dives were carried out between Oct. 3 and Dec. 6, 2013
- Collected coral community data and reviewed draft report for a 2015 NOAA Pacific Islands Regional Office project aimed at detecting changes in coral and benthic community structure along a sediment gradient in Fouha Bay
- Served as Co-Principle Investigator with Dr. Jeffrey Maynard on the 2016-2017 NOAA Saltonstall-Kennedy
  grant-funded project "Assessing the relative resilience of coral reefs and herbivorous fish communities to
  climate change in U.S. territories to inform ecosystem-based fisheries management"; contributed to project
  development, assisted with project administration, trained Guam-based field personnel, organized field
  logistics, carried out fish surveys, and contributed to development of project products
- Served as thesis committee member for multiple students

#### Biorepository Manager, University of Guam, July 1 - Present

- Coordinating development of publicly-accessible Biorepository online database and associated protocols
- Responsible for curation of specimens and samples collected as part of the NSF EPSCoR-funded Guam Ecosystem Collaboratorium research program
- Responsible for integration of existing University of Guam Marine Lab biological specimen collections into Biorepository database

#### Marine Resources Consultant, Sole-proprietorship, February 2014 - Present

- Completed survey of corals and other marine organisms and contributed to report for Piti Channel submerged pipeline repair project led by Dr. Alex Kerr for Duenas, Camacho, and Associates, February 2014
- Developed report with assistance of Dr. Peter Houk that served as basis of the Marine Habitats chapter for the CNMI Division of Fish and Wildlife's Wildlife Conservation Strategy, May-August 2015
- Completed surveys of corals, fish, and invertebrates in Saipan, Tinian, and Rota and contributed to development of report required for landing of new Docomo-Pacific telecommunications cables as subcontractor to Dr. Peter Houk and Duenas, Camacho and Associates, June-October, 2016
- Completed coral survey and developed report for the AJC Segment 6 repair project at Tanguisson, Guam as subcontractor to Duenas, Camacho, & Associates, June-October 2016

#### Guide/Naturalist, Coral Triangle Adventures, Inc.,

• Served as snorkeling guide and naturalist on live-aboard expedition to the Raja Ampat region of Indonesia from October 6-22, 2016; will serve as guide for a February 2017 trip to Raja Ampat and a Fiji/Solomon Islands trip in 2018

**Special Projects Coordinator,** *Government of Guam Bureau of Statistics and Plans - Guam Coastal Management Program, Guam, Jan.* 2007 – Sept. 2013:

- Primary responsibilities included coordinating Guam's Long-term Coral Reef Monitoring Program; reviewing
  Environmental Impact Assessments and Federal Consistency Applications; coordinating the development of
  the Guam section of the NOAA State of the Reefs reports; providing scientific advice to Guam Coastal
  Management Program administrator and assisting in development of coastal management-related strategies
  and policies; providing technical support and guidance for various GIS projects; participating in education
  and outreach activities; and providing assistance to partnering agencies on a range of projects.
- Additional responsibilities included participation in the Guam Coral Reef Rapid Response Program, including the development of response plans for groundings, spills, coral bleaching, storms, coral disease outbreaks, and *Acanthaster planci* outbreaks, as well as participating in assessments and monitoring with the Rapid Response Team after disaster events.

- Coordination of Guam long-term coral reef monitoring program involved supervising a full-time NOAA technical support specialist and three part-time monitoring assistants (all of whom are biologists; usually seeking graduate degree in marine biology); coordinating development of updated monitoring strategy; developing federal grant proposals, including development of program budget; procurement of equipment and supplies; directing, and participating in, coral reef surveys; carrying out and/or supervising data analysis; publishing reports detailing results of monitoring program; designing and carrying out research projects associated with monitoring program; providing recommendations for management actions based on results of monitoring program; and conducting outreach and education activities related to monitoring program, such as classroom visits, festival participation, radio and television appearances, and contributing articles to printed media
- Conducted coral colony size and condition surveys at multiple outer island sites between Chuuk and Yap as part of the Federated States of Micronesia Climate Change Vulnerability Self-Assessment, March 28-April 13, 2010
- Conducted coral biodiversity surveys in Apra Harbor, Guam, as part of U.S. Fish and Wildlife Service-led team; surveys were part of Navy-funded study comparing two coral reef assessment approaches; approximately 40 dives were carried out from May 8-11 and from May 26 June 5, 2009
- Conducted benthic community surveys as part of NOAA Marianas Archipelago Rapid Assessment and Monitoring Program's 2009 research cruise; surveys were conducted around Guam, Rota, Tinian, Aguihan, and Saipan from the NOAA ship Hi'ialakai; 34 dives were carried out from April 5-15, 2009
- Conducted benthic community surveys at the Min Don Rye grounding site near Falcona Beach, Guam, on Jan. 21, June 10, and June 12, 2009; surveys were carried out as part of biological assessment required by U.S. Army Corps of Engineers prior to removal of vessel.
- Developed Bureau of Statistics and Plans Dive Program; serves on Dive Control Board and as Dive Safety Officer

#### **Adjunct Faculty,** *Guam Community College, Jan.* 2011 – December 2013:

- Instructor for SU250: Introduction to Geographic Information Systems (Fall 2011, Fall 2012), SU251: Advanced Geographic Information Systems (Spr 2011, Spr 2012), and SU280: Special Topics in Geographic Information Systems courses (Spr 2012)
- Instructor for SI103/SI103L: Introduction to Marine Biology lecture and lab (Spr 2012, Fall 2012, Spr 2013, Fall 2013)
- Developed course materials, including individual lesson plans, lectures, exercises, and exams

## **NOAA Pacific Islands Assistant – Guam,** *NOAA/Environmental Careers Organization, Government of Guam Bureau of Statistics and Plans, Guam, Jan. 2004 - Jan. 2007:*

- Primary goal of position was to enhance local spatial technology capacity within Guam's coastal management community; this was achieved through regular GIS training sessions, through work on mapping/research projects, through the development of a spatial data infrastructure document for Guam and through the development of strategies for further improving and sustaining capacity.
- Designed and developed a printed, CD-ROM, and web-based version of the Guam Coastal Atlas, which provides benthic habitat data and other information relevant to coastal issues on Guam; development of the atlas also included creating the benthic habitat data using heads-up digitization of IKONOS imagery and ground-truthing using a GPS receiver.
- Provided weekly GIS training sessions and Introduction to GIS workshops for Government of Guam, federal, and NGO employees; assisted NOAA Coastal Services Center instructors with GIS and remote sensing courses; and provided spatial technology support for various Government of Guam and federal agencies.
- Developed benthic habitat data for parts of Palau as part of University of Guam Marine Lab project to map Essential Fish Habitat

# **Geographic Information Systems Technician,** *Perot Systems Government Services, NOAA Coastal Services Center, Nov., 2002 - Dec., 2003:*

• Primary responsibilities included data layer creation using remotely sensed data and heads-up digitizing,

- map/layout production using ArcGIS 8.x and Arcview 3.x software, and website design and maintenance.
- Other responsibilities included technical and content editing support for training course development, metadata creation/updating, and software application testing.

#### Biological Science Technician, USDA Forest Service Southern Research Station, Feb. - Nov., 2002:

- Primary responsibility involved preparing soil samples and standards for CHN analysis
- Additional responsibilities involved performing HCl, ammonium acetate, and Bray extractions for cation analysis and maintaining sample inventory

#### Field Technician/Intern, Enviroscience, Inc., June - July, 2001; June - Aug, 1998:

- Assisted in mussel surveys in the Allegheny River in Warren, PA and in Middle Island Creek near Sisterville, WV (2001) as part of a professional aquatic survey team.
- Participated in the translocation of endangered species of freshwater mussels threatened by impending bridge reconstruction projects in Kennerdell and Utica, PA (1998).

## **Environmental Educator/Scuba Program Manager,** Forfar Field Station, Andros Island, Bahamas, Aug., 1999 - May, 2001:

- Guided interpretive tours at land and sea locations as well as assisted professional scientists on research projects.
- Lectured to students of various ages about marine species/ecology, performed lab activities with students, and performed field station operations.
- Manager of scuba program from Jan 2000 to May 2001; responsibilities included leading safe and educational dives for divers of all experience levels, driving dive boats, and operating compressors.

#### **PUBLICATIONS**

- Minton, D., D. Burdick, and V. Brown. In prep. Changes in coral community structure across a sediment gradient in Fouha Bay, Guam.
- Raymundo, L., D. Burdick, V. Lapacek, R. Miller, V. Brown. In press. Anomalous temperatures and extreme tides: Guam staghorn *Acropora* succumb to a double threat. Marine Ecology Progress Series.
- Fenner, D. and D. Burdick. 2016. Field identification guide to the threatened corals of the U.S. Pacific Islands. NOAA National Marine Fisheries Service, Pacific Islands Regional Office, Protected Resources Division
- Houk, P., and D. Burdick. 2016. Marine biological assessment for the Docomo Pacific ATISA Guam-CNMI cable system. Technical report prepared for Duenas, Camacho & Associates.
- Burdick, D. 2016. Coral survey for the AJC Segment 6 repair project at Tanguisson, Guam. Report prepared for Duenas, Camacho, & Associates.
- Burdick, D. and P. Houk. 2015. Marine habitats of the Commonwealth of the Northern Mariana Islands. Report prepared for the CNMI Department of Lands and Natural Resources Division of Fish and Wildlife.
- Randall, R., and D. Burdick. In preparation. Zooxanthellate Scleractinian Corals of the Mariana Islands.
- Reynolds, T., D. Burdick, P. Houk, L. Raymundo, S. Johnson. 2014. Unprecedented coral bleaching across the Mariana Archipelago. Coral Reefs 33: 499.
- Kerr, A., and D. Burdick. 2014. Biological survey of the Shell Guam, Inc., submerged pipeline crossing, Piti Channel, Guam. Report prepared for Duenas, Camacho, & Associates.
- Contributing author in Danko, T. (ed.), 2013. Environments of Guam, Bess Press, Honolulu, Hawai'i.
- Minton, D., D. Burdick, J. den Haan, S. Kolinksi, and T. Schils. 2009. Comparison of a photographic and in situ method to assess the coral reef benthic community in Apra Harbor, Guam. Prepared for Naval Facilities Engineering Command Pacific, Pearl Harbor, Hawai'i.
- Burdick, D. 2008. The effectiveness of macroalgal reduction and *Diadema antillarum* addition in limiting macroalgal growth and facilitating coral recovery. Proceedings of the 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008.
- Goldberg, J., K. Adams, J. Albert, J. Asher, P. Brown, V. Brown, D. Burdick, B. Carroll, P. Craig, D. Fenner, C. Fillmed, V. Fread, M. Gawel, A. George, Y. Golbuu, L. goldman, C. Graham, A. Hall, M. Hasurmai, L.

- Jacob, D. Jacobson, E. Joseph, J. Kenyon, W. Kostka, T. Leberer, M. Luckymis, E. Lundblad, S. Malakai, J. Maragos, A. Marcus, S. Marino, D. Mathias, J. McIlwain, J. Miller, D. Minton, M. Nadon, S. Palik, N. Pioppi, L. Raymundo, B. Richards, M. Sebater, R. Schroeder, P. Schuup, E. Smith, A. Takesy, and B. Zgliczynski. 2008. Status of Coral Reef Resources in Micronesia and American Samoa: 2008. pp. 199-212. In: Wilkinson (ed.), Status of Coral Reefs of the World: 2008.
- Burdick, D., V. Brown, J. Asher, C. Caballes, M. Gawel, L. Goldman, A. Hall, J. Kenyon, T. Leberer, E. Lundblad, J. McIlwain, J. Miller, D. Minton, M. Nadon, N. Pioppi, L. Raymundo, B. Richards, R. Schroeder, P. Schupp, E. Smith, and B. Zgliczynski. 2008. Status of the Coral Reef Ecosystems of Guam. Bureau of Statistics and Plans, Guam Coastal Management Program. iv + 76 pp.
- Burdick, D., V. Brown, J. Asher, M. Gawel, L. Goldman, A. Hall, J. Kenyon, T. Leberer, E. Lundblad, J. McIlwain, J. Miller, D. Minton, M. Nadon, N. Pioppi, L. Raymundo, B. Richards, R. Schroeder, P. Schupp, E. Smith, and B. Zgliczynski. 2008. The State of the Coral Reef Ecosystems of Guam. pp. 465-509. In: J.E. Waddell and A.M. Clarke (eds.), The State of the Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. NOAA Technical Memorandum NOS NCCOS 73. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team. Silver Spring, MD. 569 pp.
- Burdick, D. 2006. Guam Coastal Atlas (CD-ROM Version). University of Guam Marine Laboratory, Multimedia Publication No. 4.
- Burdick, D. 2006. Top-down experimental manipulation of Bahamian patch reef communities: Macroalgal reduction and *Diadema antillarum* additions. Master's Thesis. Master of Environmental Studies Program, The Graduate School at the College of Charleston.
- Burdick, D. 2005. Guam Coastal Atlas (Printed Version). University of Guam Marine Laboratory, Technical Report 114. 149 pages
- Kelty, R., J. Kuartei, T. Abraham, M. Beger, D. Burdick, E. Cochrane, P. Craig, G. Didonato, D. Fenner, A. Green, Y. Golbuu, J. Gutierrez, M. Hasurmai, C. Hawkins, P. Houk, D. Idip, D. Jacobson, E. Joseph, T. Keju, J. Kuareti, S. Palik, L. Penland, S. Pinca, K. Rikim, J. Starmer, M. Trianni, S. Victor, and L. Whaylen. 2004. Status of the Coral Reefs in Micronesia and American Samoa. pp. 381-409. In: Wilkinson (ed.), Status of Coral Reefs of the World: 2004, Vol. 2.

#### **TRAINING**

- PRIMER 7 statistical software training, March 14-18, 2016, Ponte Vedra Beach, FL
- Reef Resilience and Responding to Climate Change Workshop for Trainers, June 3-7, 2011, Palau
- U.S. Coast Guard Auxiliary Boating Skills and Seamanship Training, Feb. 11-Mar. 4, 2011, Guam
- Improving Data Collection, Storage, Handling, Visualization, and Analyses for Micronesia's Coral Reef Monitoring Programs, Nov. 8-12, 2010, Saipan, Commonwealth of the Northern Mariana Islands
- Dive Xtra Underwater Scooter Training, Oct. 25-29, 2010, Guam
- Coral Crime Scene Investigation Training, June 14-18, 2010, Guam
- Watershed and Stormwater Management Training, conducted by the Center for Watershed Protection, Feb. 11-13, 2008, University of Guam
- NOAA Natural Resource Damage Assessment Training, Nov. 4-6, 2008, Guam Hilton Hotel
- *Lidar Data Application*, conducted by U.S. Army Corps of Engineers, April 21-23, 2008, University of Guam Water and Environmental Research Institute
- Assessment and Management of Coral Reefs, July Aug., 2007, University of Guam Marine Laboratory, 6 credit-hr. graduate-level course taught by multiple instructors
- Responding to Climate Change: A Workshop for Coral Reef Managers, Aug. 27 30, 2007, American Samoa; workshop developed and conducted by NOAA Coral Reef Conservation Program, the Great Barrier Reef Marine Park Authority, the Nature Conservancy, and the World Bank/Global Environment Facility's Coral Reef Targeted Research Program
- Central Pacific Coral Disease Workshop: Protocols for Assessment, Monitoring, and Outbreak Investigation, Feb. 27 Mar. 3, 2007, University of Guam Marine Laboratory; workshop conducted by multiple instructors
- ArcIMS Workshop, Feb. 22 24, 2006, Honolulu, HI
- Fundamentals of ERDAS Imagine I, Nov. 14 16, 2005, Instructor-led training, Las Vegas, NV
- Fundamentals of ERDAS Imagine II, Nov. 17 18, 2005, Instructor-led training, Las Vegas, NV

- Facilitative Leadership Training, June 9, 2005, Maui, HI
- Coastal Applications of GIS, May 27-28, 2004, University of Guam Marine Laboratory, Guam
- Pacific Islands Technical Assistantship: Technical Training Session, May 10-14, 2004, NOAA Coastal Services Center, Charleston, SC
- Geodatabase Basics, Aug. 21, 2003, Coastal Services Center, Charleston, SC
- Remote Sensing for Spatial Analysts, July 30 31, 2003, NOAA Coastal Services Center, Charleston, SC
- Coral Reef Ecology Course, July Aug., 2002, Bermuda Biological Station for Research
- Bahamas Ecotourism and Adventure Travel Certificate, 4.0/4.0 GPA, Aug. Nov., 1999, Hocking College and Forfar Field Station, Andros, Bahamas
- PADI Divemaster and Rescue Diver Training, Nov. 1999, Forfar Field Station, Andros, Bahamas

#### CONFERENCE / WORKSHOP PARTICIPATION

- Presented "The status of Guam's shallow coral reefs" at the 36<sup>th</sup> U.S. Coral Reef Task Force business meeting, Guam, Sept. 23
- Presented at and participated in the Pacific ESA-listed Coral Species Identification Workshop, Honolulu, HI,
- Presented "Home is where the waves are: Corals in Guam's exposed reef fronts are resilient to local stressors but vulnerable to regional warming" at the 13th International Coral Reef Symposium, June 25-26, 2016
- Co-contributor for presentation, "An ounce of prevention: Building rapid response capacity for acute reef impacts on Guam," presented by Valerie Brown, 13<sup>th</sup> International Coral Reef Symposium, June 19-24, 2016
- Co-contributor for presentation, "Guam's staghorn Acropora populations require managing for resilience," presented by Valerie Lapacek, 13<sup>th</sup> International Coral Reef Symposium, June 19-24, 2016
- Co-contributor for poster presentation, "Let the reef be your guide: An adaptive approach to monitoring on Guam," presented by Roxanna Miller, 13<sup>th</sup> International Coral Reef Symposium, June 19-24, 2016
- Presented "Home is where the waves are: Corals in Guam's exposed reef fronts appear resilient to local stressors but vulnerable to regional warming at the 2016 Island Sustainability Conference, Guam, April 11-15, 2016
- Co-contributor for presentation, "Quantifying coral bleaching impacts in Guam's species rich shallow reef zone", presented by Travis Reynolds, Guam Coral Reef Symposium, April 14, 2015
- Co-contributor for presentation, "Back-to-back bleaching episodes result in extensive loss of shallow staghorn Acropora in Guam", presented by Dr. Laurie Raymundo, Guam Coral Reef Symposium, April 14, 2015
- Co-contributor for presentation, "Let the reef be your guide: Adaptive monitoring techniques", presented by Roxanna Miller, Guam Coral Reef Symposium, April 14, 2015
- Served as a local organizer and lecturer for 2014 SECORE (SExual COral REproduction) Guam Workshop,
   July 14-24, 2014, University of Guam Marine Lab/Underwater World
- Presented "A quantitative description of Guam's reef front coral communities and a preliminary analysis of their robustness to local stressors" at the 2014 Asia-Pacific Coral Reef Symposium, June 23-27, 2014, Taiwan
- Served as local organizer and lecturer for 2013 SECORE (SExual COral REproduction) Guam Workshop, July 25-Aug 3, 2013, University of Guam Marine Lab/Underwater World
- "Where are Guam's canaries in the coal mine? Mapping the island's staghorn thickets", Presented at the 2013 Guam Coral Reef Symposium, June 24, 2013, Hyatt Regency Guam
- Provided guest lecture "Introduction to GIS, GPS, and Remote Sensing" for 2013 National Partnerships in Environmental Technology Education Indigenous Fellows Institute, June 3-7, 2013, Guam Community College
- Assisted with planning and implantation of the Coral Health Impacts Workshop attended by participants from throughout Micronesia and Southeast Asia; presented lecture on scleractinian coral identification and an overview of Guam's long-term coral reef monitoring program, January 14-18, 2013, University of Guam Marine Lab
- "Stormwater impacts to Guam's aquatic resources: Why we need to protect streams, wetlands, and reefs", Co-presented with Valerie Brown, NOAA Pacific Islands Regional Office, at the 2011 Guam Stormwater Workshop, July 27-29, 2011, Sheraton Laguna Resort, Guam
- Presented the "Monitoring Coral Bleaching" and "Monitoring for Resilience" modules of the NOAA Reef Resilience and Climate Change Workshop, August 17-20, 2009, Guam Hilton Hotel

- "Top-down experimental manipulation of Bahamian patch reef communities: Macroalgal removal and Diadema antillarum additions." Poster presented at the 11<sup>th</sup> International Coral Reef Symposium, July 7-11, 2008, Ft. Lauderdale, Florida
- "Coastal mapping products." Presented at the 3<sup>rd</sup> Regional Conference of the Pacific Association of Land Professionals, March 17-20, 2008.
- "The Guam Coastal Atlas": Creating benthic habitat data and a printed, CD-ROM, and web-based atlas with limited resources." Presented at the Pacific Island Countries GIS/Remote Sensing Conference, Suva, Fiji, Nov. 27-30, 2006
- "The Guam Coastal Atlas: Providing benthic habitat data and other coastal information for the nearshore waters of Guam." Presented at the PacGeo Conference, Honolulu, HI, Oct. 3-5, 2006
- "NOAA's Pacific Islands Assistantship at work on Guam: Building local spatial technology capacity and providing support for coastal mapping projects." Presented at the Coastal GeoTools '05 Conference, Myrtle Beach, South Carolina, Mar. 7-10, 2005
- "NOAA's Pacific Islands Assistantship at work on Guam: Spatial technology support and local capacity building for Guam's coastal management community." Presented at the Coastal Zone '05 Conference, New Orleans, Louisiana, July 18-21, 2005
- "U.S. NOAA Pacific Islands Assistantship Program: Current projects on Guam." Poster presented at the Coastal Zone Asia Pacific Conference, Brisbane, Australia, Sept. 5-9, 2004
- "NOAA Pacific Islands Assistantship Guam." Presented at the All-Islands Coastal Zone Management Conference, Saipan, CNMI, June 21-23, 2004

#### OTHER CONFERENCES/WORKSHOPS ATTENDED

- 3<sup>rd</sup> Micronesia Challenge Measures Working Group Meeting, Feb. 6-11, 2012, Koror, Palau
- 2010 Pacific Island Committee Meeting, Chuuk, *March* 8-12, 2010
- 2<sup>nd</sup> Micronesia Challenge Measures Working Group Meeting, Feb. 15-19, 2010, Koror, Palau
- "Getting Maps and Forestry Inventory Assessment Data in the Hands of the Users Workshop/State-wide Assessment and Resource Strategy Kickoff," sponsored by the U.S. Forest Service, *April 27 May 1, 2009, Koror, Palau*
- Hawai'i Geospatial Modeling and Analysis Workshop, sponsored by the U.S. Forest Service, *Aug.10-14*, 2009, *Honolulu*, *Hawai'i*
- NOAA Pacific Coral Reef Ecosystem Integrated Observation System Workshop, *Nov.18-20, 2008, Honolulu, Hawai'i*
- "Moving toward measuring our effectiveness: The 1<sup>st</sup> meeting of the Micronesia Challenge Measures Working Group," *June 2-6, 2008, Pohnpei, Federated States of Micronesia*
- ESRI International GIS Users Conference, Aug. 9-13, 2006, San Diego, California
- ESRI International GIS Users Conference, Aug. 9-13, 2004, San Diego, California
- Pacific Islands Environmental Conference, June 23-25, 2004, Saipan, CNMI
- 10<sup>th</sup> International Coral Reef Symposium, *June 28-July 2, 2004, Okinawa, Japan*

# SOFTWARE/COMPUTER LANGUAGE PROFICIENCY

- ArcGIS versions 8.x, 9.x, and 10.x; Spatial Analyst and 3D Analyst Extensions
- Trimble Terrasync and GPS Pathfinder Office
- PRIMER/PERMANOVA, SigmaPlot, R, and NCSS statistical software
- Adobe Photoshop CS5, Dreamweaver CS3, InDesign CS5, and Fireworks CS3
- Proficient in HTML code, basic website development
- Microsoft Word, Excel, and Powerpoint

#### GRANTS AND SCHOLARSHIP RECOGNITION

- Seaspace Scholarship, 2002-03, Seaspace, Inc.
- Exploration Fund Grant, 2002, Explorer's Club
- Faculty-Student Research Collaboration Grant, 2001, Masters of Environmental Studies Program, The

- Graduate School at the College of Charleston
- Barbara Lindstedt Trust Award, 2001-02, Masters of Environmental Studies Program, The Graduate School at the College of Charleston
- Second National Bank of Warren Scholarship, 1998-99
- Omicron Delta Kappa National Leadership Society, 1997-99
- Hiram College Endowed Scholarship, 1997-99
- Hiram College Garfield Scholarship, 1995-99
- Ohio Academic Scholarship, 1995-99

#### SELECTED PRO BONO PROJECT DEVELOPMENT AND VOLUNTEER ACTIVITIES

- Guide for Wilderness Travel Coral Spawning Expedition, 2011
- Developed, maintains, and updates guamreeflife website (http://www.guamreeflife.com)
- International Coastal Cleanup Site Co-Leader, 2008 and 2009
- International Coastal Cleanup Participant, *multiple years*
- Recycling volunteer at Liberation Day parade and festival, multiple years
- Participated in other coastal and roadway cleanup efforts, multiple years
- Provided safety support as Divemaster for George Washington High School students during snorkeling events at Ypao Beach, *multiple events*
- Fish Bowl high school trivia competition moderator, *multiple years*
- Participated in outreach efforts at Island Pride Festival and other events, multiple years
- Participated in Career Day at George Washington High school, multiple years
- Guide for "Splashing in the Sea" youth snorkeling event, *multiple years*

#### **REFERENCES**

#### Laurie Raymundo, Ph.D.

Associate Professor of Marine Biology University of Guam Marine Laboratory

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email: lraymundo@uguam.uog.edu

#### Terry Donaldson, Ph.D.

Associate Professor of Marine Biology University of Guam Marine Laboratory

phone: (671) 735 - 2175

email: terryjdonaldson@gmail.com

# **Evangeline Lujan**

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Phone: (671)-489-4417 E-Mail: christianpaulbenitez@gmail.com

Education

Simon A. Sanchez High School *High School Diploma* 

June 2009

University of Guam

Bachelor of Business Administration, Concentration in Entrepreneurship

May 2014

Professional Experience

Planner I Bureau of Statistics and Plans Socio-Economic Planning Program Government of Guam October 20, 2014 to Current

# CORAL REEF CONSERVATION GRANT PROGRAM and CORAL REEF INITIATIVE MANAGEMENT GRANT

- Assist the Chief Planner and Coral Reef Initiative Coordinator in the implementation and administration of the Coral Reef Conservation Grant program and the Coral Reef Initiative Management Grant to include the preparation of correspondence, preparation of Memorandum of Understanding, preparation of progress reports, preparation of request for proposals, preparation of request for price quotations, maintenance of grant files, implementation of the public and outreach component of the grant with initial guidance from the Supervisor.
- Assist the Chief Planner in reviewing request for reprogramming request and preparing the reprogramming requests to include the memorandum for the Chief Planner review and Director signature, the revised budget and the work request. Ensure the request is consistent with the project proposal.
- Email subgrantee programmatic point of contact and financial point of contact to remind entity about the submission of the reports 30 or 25 days before the progress report and financial reports are due, and send another reminder notice 10 days before the progress report and financial reports are due.
- Assist the Chief Planner and Coral Reef Initiative Coordinator sent out follow up memorandum and or email correspondence to subgrantee that have not submitted their report three days after the report due date.
- Maintain a CRCP and CRI log sheet to track the submission of progress reports, financial reports, close out report, and property inventory report.
- Maintain programmatic files in grant files 30 days after the supervisor reviews documents.
- Reserve the conference room for the meeting, send a reminder call a day before the meeting to ensure reservation is set, assist in sending reminder calls and or emails three days to invited participants before the meeting, ensure multi-media, visual aid screen, laptop, white board and flip chart are set up prior to meeting, ensure a sign for the meeting and in-sheet sheet is available, and meeting documents produced.

- Obtain the three price quotation for the annual Guardian of the Reef Training beginning in October to ensure the training is scheduled for the start of Guardian of the Reef Training.
- Obtain three price quotations for the bus transportation for the Guardian of the Reef presentation and the Guam Nature Alliance activities; and coordinate the bus schedule one or two weeks from the date the buses will be needed to include the DPW bus schedule if the private busing will not available.
- Coordinate the Guardian of the Reef presentation schedule at the elementary schools and the bus transportation schedule.
- Assist the Chief Planner in the coordination of the Pig Hunting Derby and the Pork in the Park outreach to include attending the planning meetings, map out the logistics for the Pork in the Park, obtain price quotations for the outreach supplies, man the check in site, and provide logistics and set up support for the Pork in the Park.

#### **GUAM STATE CLEARINGHOUSE**

- Thoroughly assess criminal justice federal grant in aid applications and State Plans, amendments and other federal commitments to ensure consistency with territorial policies, goals, and objectives; adherence with applicable federal and local statutes, guidelines, and regulations pertaining to the grant.
- Conduct research and analysis, and collect data, if necessary, in order to evaluate program
  effectiveness in addressing a territorial need; impact upon the territory's socio-economic
  development; weakness or problems that may arise through program implementation.
- Consult and alert applicant agencies with findings or anticipated problems, making all attempts to assist in resolving the problem through recommended adjustments, development and improvement in program implementation.
- Prepare written comments and make recommendations on whether the application should be approved, disapproved or conditionally approved by the Guam State Clearinghouse by the due date.

#### PAUL COVERDELL FORENSIC SCIENCE IMPROVEMENT GRANT PROGRAM

- Assist the Socio Economic Planning Program Supervisor in the preparation and administration of the Paul Coverdell Grant Program to include the preparation of grant award application, preparation of award acceptance and certifications, address special award conditions and prepare the necessary correspondence to obtain information on how to meet compliance with special award conditions, preparation of subgrantee administrative manual, ensure updates are made to subgrantee administrative manual, preparation of correspondences, preparation of Memorandum of Understanding, preparation of progress reports, preparation of request for proposals, preparation of correspondences for Grantor approval for budget modifications, change of project scope, change of project period, contact information and others, preparation of correspondence regarding reprogram and other requests and supporting documents to subgantees, and maintenance of grant files with initial guidance from the Supervisor such as Work Requests, Grant Adjustment Notices, Certification, Progress and Financial Reports, and Correspondences
- Contact Coverdell programmatic point of contact and financial point of contact to remind entity about the submission of the reports 10 days before the quarter progress report and quarter financial report are due.
- Within 90 days of program desired completion date, coordinate with the BSP Administrative Staff to work with the sub recipients financial point of contact to ensure the following: available funds are encumbered and obligated (Issued Purchase Order), invoices paid, outstanding requisitions are de obligated with DOA, outstanding purchase orders are de obligated with GSA,

- and journal voucher of negative balances are addressed; and to ensure the Bureau administrative funds are encumbered and or deobligated.
- Ensure successful Grant Close-Out Process with compliance with Progress Reporting Requirements, Financial Status Reporting Requirements, Special Condition Compliance, Financial Reconciliation Requirements and Programmatic Requirements Certification.
- Send out follow up memorandum and or email correspondence to subgrantee that has not submitted their report five days after the report due date.
- Ensure Semi-Annual Progress Reports via on-line reporting process is completed before the prescribe grant requirement deadline.
- Maintain a Coverdell log sheet to track the submission of quarter progress reports, quarter financial reports, close out report, and property inventory report that is updated.
- Maintain good work relations with program point of contact and financial point of contact regarding grant program to include Grant Policy Advisor.
- Assist the Socio Economic Planning Program Supervisor in conducting on-site programmatic and evaluative monitoring to ensure compliance with Federal and State laws and regulations and to determine if the subgrant is achieving its overall objectives and having some positive impact on the problem that the application is addressing through funding of this subgrant. Preparation of correspondence regarding on-site monitoring to subgrantee; conduct pre-desk top review using the prescribed BJA Monitoring Tool with grant files; preparation of correspondence regarding the findings and recommendations of the on-site monitoring; conduct follow-up with subgrantee on corrective action plan; preparation of final correspondence once subgrantee has met all programmatic and financial grant requirements to complete the on-site monitoring.
- Maintain programmatic files in grant files.
- Assist in other related duties as required by the Socio Economic Planning Program Supervisor.

#### RESIDENTIAL SUBSTANCE ABUSE TREATMENT (RSAT) GRANT PROGRAM

- Assist the Socio Economic Planning Program Supervisor in the preparation and administration of the Residential Substance Abuse Treatment (RSAT) Grant Program to include the preparation of grant award application, preparation of award acceptance and certifications, address special award conditions and prepare the necessary correspondence to obtain information on how to meet compliance with special award conditions, preparation of subgrantee administrative manual, ensure updates are made to subgrantee administrative manual, preparation of correspondences, preparation of Memorandum of Understanding, preparation of progress reports, preparation of request for proposals, preparation of correspondences for Grantor approval for budget modifications, change of project scope, change of project period, contact information and others, preparation of correspondence regarding reprogram and other requests and supporting documents to subgantees, and maintenance of grant files with initial guidance from the Supervisor such as Work Requests, Grant Adjustment Notices, Certification, Progress and Financial Reports, and Correspondences
- Contact RSAT programmatic point of contact and financial point of contact to remind entity about the submission of the reports 10 days before the quarter progress report and quarter financial report are due.
- Within 90 days of program desired completion date, coordinate with the BSP Administrative Staff to work with the sub recipients financial point of contact to ensure the following: available funds are encumbered and obligated (Issued Purchase Order), invoices paid, outstanding requisitions are de obligated with DOA, outstanding purchase orders are de obligated with GSA, and journal voucher of negative balances are addressed; and to ensure the Bureau administrative funds are encumbered and or deobligated.

- Ensure successful Grant Close-Out Process with compliance with Progress Reporting Requirements, Financial Status Reporting Requirements, Special Condition Compliance, Financial Reconciliation Requirements and Programmatic Requirements Certification.
- Maintain good work relations with program point of contact and financial point of contact regarding grant program to include Grant Policy Advisor.
- Send out follow up memorandum and or email correspondence to subgrantee that has not submitted their report five days after the report due date.
- Ensure Quarter Performance Measurement Tool (PMT) and Semi-Annual Progress Reports via the on-line reporting process is completed before the prescribe grant requirement deadline.
- Maintain a Coverdell log sheet to track the submission of quarter progress reports, quarter financial reports, close out report, and property inventory report that is updated.
- Assist the Socio Economic Planning Program Supervisor in conducting on-site programmatic and evaluative monitoring to ensure compliance with Federal and State laws and regulations and to determine if the subgrant is achieving its overall objectives and having some positive impact on the problem that the application is addressing through funding of this subgrant. Preparation of correspondence regarding on-site monitoring to subgrantee; conduct pre-desk top review using the prescribed BJA Monitoring Tool with grant files; preparation of correspondence regarding the findings and recommendations of the on-site monitoring; conduct follow-up with subgrantee on corrective action plan; preparation of final correspondence once subgrantee has met all programmatic and financial grant requirements to complete the on-site monitoring.
- Maintain programmatic files in grant files.
- Assist in other related duties as required by the Socio Economic Planning Program Supervisor.

#### COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY

- Assist the Socio Economic Planning Program Supervisor in the preparation and submission of Guam's CEDS Update to the U.S. Economic Development Administration in collaboration with GEDA, and the CEDS committee in the preparation of the CEDS meetings and preparation of correspondence.
- Reserve the conference room for the meeting, send a reminder call a day before the meeting to ensure reservation is set, assist in sending reminder calls and or emails three days to invited participants before the meeting, ensure multi-media, visual aid screen, laptop, white board and flip chart are set up prior to meeting, ensure a sign for the meeting and in-sheet is available, and meeting documents produced.
- Assist in other related duties as required by the Socio Economic Planning Program Supervisor.

#### **IMAGINE GUAM 2065**

- Assist the Socio Economic Planning Program Supervisor in Secretariat responsibilities for the Social Stabilization and Guam Modernization Committees to include preparation of correspondences, coordination of meetings, and assist in sending reminder calls and or emails three days to committee members three days before the meeting, participation in meetings, and note taking of minutes.
- Assist in other related duties as required by the Socio Economic Planning Program Supervisor.

#### Grants.Gov password update and Systems for Awards Management annual renewal

- Update passwords for grants.gov quarterly for DUNS 778904292 and 855031506.
- Renew the SAM annual update (If any changes to the Director, need to update the DUNS number with DUNS and Bradstreet Australia via email. Documentation can be found in the binder to update the information).

#### **Bureau of Statistics and Plans Website**

 Maintain and update the Socio Economic Planning Program and Coral Reef Initiative program site. Coordinate and collaborate with the Socio Economic Planning Program staff and Coral Staff on posting and updating the information on the web.

#### Watabe Weddings – *Internship*

Fall 2013

- Learned operations of the wedding business on Guam.
- Learned the job of a party coordinator, from preparing to hosting parties, and serving guests.
- Learned to work with party operations staff team, as well as coordinate with other departments.
- Finished internship requirements and offered a part time job as party coordinator.

#### Special Project, with UOG Cooperative Extension Service

Aug. - Dec. 2013

- Developed a survey to determine farm gate prices of local produce
- Practiced and developed phone etiquette from conducting phone surveys with hundreds of local farmers
- Surveyed local vegetable stands and grocery stores for local produce prices on site
- Collected and organized data received through surveys

#### Party Coordinator, at Watabe Weddings

Nov. 2013 - Mar. 2014

- Oversaw planning and coordinating wedding parties.
- Served foreign customers from Japan, Taiwan, and China
- Prepared paper work required for parties and wrote reports to keep records of events for each party.

#### **Business Plan Development**

Jan-May 2014

- Assisted to create an innovative product utilizing the Blue Ocean Strategy used to develop a business plan for a new local brand of apparel for Guam
- Conducted a market analysis based on the relative industry of the business
- Organized the operational procedures and production methods for the business
- Conducted a 5 year financial projection for the business
- Presented our business plan at the 2014 American Marketing Association's Marketing Conference

#### Skills

- Proficient in Microsoft Office 2007: Word, Excel, PowerPoint, and Publisher.
- Ability to work with both Mac and PC operating systems and various computer applications such as Microsoft Office Applications, Adobe Creative Suite Applications, etc.
- Knowledgeable in AS400 Financial Management System to view accounts balances, encumbrances, payments, purchase orders, etc.
- Knowledgeable in operating a Velobind Machine, Spiral Binding Machine, 10 Key punch calculator, facsimile machine, scanner, telephone systems, laser printers and other related office systems.
- Knowledgeable in setting up a multi media project with laptop.
- Capable of working effectively with the public and employees.
- Excellent skills in communicating effectively, orally and in writing.
- Capable of making work decisions in accordance with appropriate program guidelines.
- Capable of maintaining records and preparing reports by the due dates.
- Interpersonal skills, Good communication skills, and meets project deadlines.
- Graphic Designing
- Webpage Designing
- Digital Photography and Videography

# Lola E. Leon Guerrero P.O. Box 114 Hagatna, Guam 96932 Email: pldje@teleguam.net

Contact Number: (671) 472-1421 (h) • (671)486-2646

#### **EDUCATION**

Bachelor of Business Administration in Finance and Economics, August 25, 1986 - May 1990 University of Guam

Major courses completed: Principles of Accounting I & II, Money & Banking, Corporate Finance, Basic Business Finance, Business Law, Financial Institution Management, Budgeting, Investments, Business Policy, Principles of Economic I & II, Basic Quantitative, Economics Geography, Introductory Statistics, and Applied Statistics

#### **WORK EXPERIENCE**

Chief Planner
Bureau of Statistics and Plans
Government of Guam

July 25, 2016 to Current PO Box 2950 Hagatna, Guam 96932

- Directs all Planning Information Program and Socio-Economic Planning Program and Guam Coastal Management Program functions with the Bureau. Also provides direct oversight over Department of Justice, NOAA Commerce and DOI and other federal grants and maintains familiarity with all grant requirements and to ensure that the Bureau complies with federal grant management rules and regulations specific to each grant administered inclusive of the Super Circular Rules; ensure grants comply with federal and local requirements; ensures federal grants and grants reports are submitted on time to federal funding agency; ensure sub grantees are monitored; works with department heads in addressing their requirements while ensure federal requirements are met. Prepares applications for submission to federal funding agencies, prepares extension requires, and prepares Scope of Work and Memorandum of Understanding as required.
- Oversees the Bureau's operational effectiveness which includes: (a) development of performance based budget; (b) development of annual General Fund budget request; (c) ensures allotment release schedules are appropriate; (c) certifies fund availability for all financial documents; (e) signs electronic federal grant documents on behalf of the Director; (f) reviews all documents prior to submission to Director for signature to ensure they are complete and consistent with agency and Guam policies; (g) signs documents on behalf of the Director (this function varies from Director to Director); and (h) serves as Acting Director in the Director's absence (this function varies by Governor and by Director).
- Establishes criteria for the preparation of impact studies and statements; ensure studies and statements are supported by analytical and descriptive data; ensures recommendations are well thought out; ensures recommendations are based on a balanced assessment of positive and negative outcomes.
- Represent the Bureau at conferences and meetings with local government officials, public and private agencies, and representatives; convey Guam's policies and participate in formulation of Guam's policies.
- Conducts, analyzes, and writes comprehensive strategic plans, specialized studies and grant applications. Identifies appropriate descriptive and analytical data, analyzes data, formulate document components, and formulates recommendations, policy positions, and budgets.
- Oversee adoption process of elements to Guam's comprehensive development plan.
- Provides technical support to the Governor's Civilian Military Task Force and other task forces and committees in order that they can identify and meet the challenges of military growth. Prepares or causes to be prepared specialized studies assessing the impact of military growth on the island's economic, social and cultural sectors. Maintains familiarity with all issues related to the relocation of the Marines and military expansion, including actions and reactions in Guam, Japan, the US Congress, DoD, and national and local medias.

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Planner IV
Bureau of Statistics and Plan
Socio-Economic Planning Program
Government of Guam

March 24, 2013 to July 22, 2017 P.O. Box 2950 Hagatna, Guam 96932

- Provide direct oversight over the Socio Economic Planning Program.
- Provide direct oversight over the planning, development, coordination and implementation of the U.S. Department of Justice grants, DOI, and NOAA grants.
- Provide direct oversight in the development, implementation, planning support and technical assistance in the areas of criminal justice planning, economic development planning, fisheries development planning, evaluation of federal grants for intergovernmental review to ensure plans and updates to plans are prepared and submitted to the requesting agency.
- Provide direct oversight in coordinating the review of Guam's participation and involvement in national and regional organization to ensure Guam participates by providing its input into national and regional policies.
- Applies for and administers the Edward Byrne Justice Assistance Grant Program.
- Applies for and administers the Paul Coverdell Forensic Science Improvement Grant Program.
- Coordinate and prepare Guam's Multi Year Strategy for Drug Control, Violent Crime and Criminal Justice System Improvement.

Interim Administrator
Bureau of Statistics and Plan
Guam Coastal Management Program
Government of Guam

December 16, 2013 to July 8, 2014 P.O. Box 2950 Hagatna, Guam 96932

#### **Coastal Management Program Supervisor:**

- Supervise the day to day operations of the Guam Coastal Management Program and the Land Use Planning Program (LUPP) in the following:
  - by providing direct oversight in the administration of all activities of the Guam Coastal Management Program to include administering the Coral Reef Conservation Program Cooperative Agreement, the Department of Interior Coral Reef Initiative Management Grant Program, the U.S. Geology Survey, and the Coastal Zone Management Act in the network coordination, development, policy and legislative efforts, federal consistency, master planning efforts, public outreach and education, and Section 309 implementation.
  - by directing all Guam Coastal Management Program staff in the application of GCMP local and federal policy, law and rules and regulation in review and recommendation on development application and federal consistency by reviewing final products for completeness, professionalism, timeliness and accuracy.
  - by directing all GCMP staff, Land Use Planning staff, and Coral Reef staff in the implementation of the Coastal Zone Management Act and Coral Reef Conservation Program Cooperative Agreement tasks.
- Monitors staff progress on assigned tasks and provides direction on improving product deliverables. Conducts mid performance employee performance evaluation with subordinate staff and provides recommendation to the Director. Counsels subordinate staff on personnel problems and work related issues as necessary.
- Provides recommendations and directs input to the Director in the formulation and development of plans, policies, and studies that further the Guam Coastal Management Program.

#### **Coastal Zone Management Act**

• Oversee the Grant Administration of the Coastal Zone Management Act in the development of

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the application and implementation of the tasks identified in the grant.

- Administer the programs projects and activities of the Guam Coastal Management Program to include Networking, Development, Policy, and Legislative Efforts, Master Planning Efforts, Federal Consistency Efforts, Public Outreach and Education, and Section 309.
- Oversee the review and analysis of land use, federal consistency, and coastal planning projects to ensure compliance with applicable federal and local requirements and guidelines.
- Review draft Application Review Committee correspondence prepared by Senior Planners comments to ensure consistency with the local and federal requirements for the Director signature.
- Review and prepare grant reprogramming requests and revised scope of work for the Director signature for formal submission on the NOAA grants online system.

#### **Coral Reef Conservation Program Cooperative Agreement**

- Oversee the Grant Administration of the Coral Reef Conservation Program Cooperative Agreement, the development of the application and implementation of the projects funded.
- Review and prepare grant reprogramming requests and scope of works for projects and personnel for the Director signature for formal submission on the NOAA grants online system.

#### **Coral Reef Initiative Management Grant**

- Oversee the Grant Administration of the Coral Reef Conservation Program Cooperative Agreement the development of the application and implementation of the projects funded.
- Review and prepare grant reprogramming requests for the Director signature for formal submission on the grants management system.

#### **Land Use Planning Program**

 Oversee the development of mapping tools and products to assist BSP's planners and other government entities in reviewing and planning for the wide range of land use, socio-economic, and environmental issues it is tasked.

Planner IV - Acting Detail Bureau of Statistics and Plan Socio-Economic Planning Program Government of Guam October 24, 2011 to March 23, 2013 P.O. Box 2950 Hagatna, Guam 96932

- Provide direct oversight over the Socio Economic Planning Program.
- Provide direct oversight over the planning, development, coordination and implementation of the U.S. Department of Justice grants, DOI, and NOAA grants.
- Provide direct oversight in the development, implementation, planning support and technical
  assistance in the areas of criminal justice planning, economic development planning, fisheries
  development planning, evaluation of federal grants for intergovernmental review to ensure plans and
  updates to plans are prepared and submitted to the requesting agency.
- Provide direct oversight in coordinating the review of Guam's participation and involvement in national and regional organization to ensure Guam participates by providing its input into national and regional policies.
- Applies for and administers the Edward Byrne Justice Assistance Grant Program.
- Applies for and administers the Paul Coverdell Forensic Science Improvement Grant Program.
- Coordinate and prepare Guam's Multi Year Strategy for Drug Control, Violent Crime and Criminal Justice System Improvement.

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Planner III
Bureau of Statistics and Plan
Socio-Economic Planning Program
Government of Guam

January 30, 1999 to October 23, 2011 P.O. Box 2950 Hagatna, Guam 96932

- Applies for and administers the Edward Byrne Justice Assistance Grant Program.
- Applies for and administers the Paul Coverdell Forensic Science Improvement Grant Program.
- Coordinate and prepare Guam's Multi Year Strategy for Drug Control, Violent Crime and Criminal Justice System Improvement.
- Prepare and submits Guam's Annual Evaluation Report to the Bureau of Justice Assistance
  describing the program activities, performance metrics, and evaluation findings of Byrne funded
  projects, and how the Byrne funds have impacted Guam's criminal justice agencies by reviewing and
  evaluating all sub grantees annual performance narrative reports by the due date.
- Conduct annual programmatic evaluations of the JAG and Coverdell sub grantees to monitor the
  quality of the programmatic activities and financial expenditures to determine if the project is
  progressing and is achieving its intended results; to identify and disseminate information about
  projects of proven effectiveness so that this project can be replicated locally or nationally.
- Oversee the planning, development and implementation of Guam's Sex Offender Registry by
  providing technical assistance to the Sex Offender Registry Committee in developing and reviewing
  Guam's proposed registry statute to ensure that is in compliance with the federal mandates so Guam
  does not lose federal funds.
- Lead the development of the Guam's Sex Offender Registry Standard Operating Procedures to
  ensure the responsible agencies involved in carrying out the legislation comprehend their
  responsibilities and implement the legislation. Drafted the SOP based on the legislation, then
  facilitated meetings to bring the responsible agencies together to review the draft SOP in order to
  finalize the document.
- Assist in the amendments to the language in Public Law 28-77 to strengthen Guam's sex offender registration and notification program requirements; and to ensure the language mirror the procedures developed and in place.
- Coordinate and ensure that Guam's Sex Offender Registry Plan under the National Sex Offender Registry Program (NSOR) which is administered by the Superior Court of Guam is consistent with Guam's goals of establishing and developing a Sex Offender and Notification Registry System; and to interface with the FBI's NCIC 2000.
- Collect, organize, analyze and prepare materials in response to reports, plans and projects related to criminal justice issues by the due date.
- Establish, consult and maintain contacts with appropriate representatives from Government of Guam's criminal justice agencies, federal local law enforcement officials, legislature, U.S. Department of Justice officials, and states receiving funds from the Edward Byrne Justice Assistance Grant Program in order to identify and stay abreast of criminal justice issues that may have a potential importance to the Island; and to collect descriptive and analytical data, as well as staying abreast of developments and changes in the federal laws, regulations and congressional bills that will impact the Byrne JAG Fund.
- Request for Proposals: Conduct evaluation and rating of Request for Proposals for the Department of Mental Health and Substance Abuse, the Department of Corrections, and the Customs and Quarantine Agency.
- Plan and supervise the development and formulation of the Bureau of Statistics and Plans Performance Based Budget and Strategic Plan for submission to the Bureau of Budget and Management Research by the due date.
- Collaborate with each Division within the Bureau to define the task and activities within each Division to create the Percentage, Hours, Task and Activities Table to formulate the PBB spreadsheet template using Excel.
- Oversee the preparation of the Bureau of Statistics and Plans Strategic Performance Based Budget for Fiscal Year 2009 and Fiscal Year 2010 for submission to the BBMR by the due date.

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Contact Number: (671) 472-1421 (h) • (671)486-2646

#### **Technical Reviews:**

 Guam State Clearinghouse Review - Thoroughly assess criminal justice federal grant in aid applications and State Plans, amendments and other federal commitments to ensure consistency with territorial policies, goals, and objectives; adherence with applicable federal and local statutes, guidelines, and regulations pertaining to the grant.

Conduct research and analysis, and collect data, if necessary, in order to evaluate program effectiveness in addressing a territorial need; impact upon the territory's socio-economic development; weakness or problems that may arise through program implementation.

Consult and alert applicant agencies with findings or anticipated problems, making all attempts to assist in resolving the problem through recommended adjustments, development and improvement in program implementation.

Prepare written comments and make recommendations on whether the application should be approved, disapproved or conditionally approved by the Guam State Clearinghouse by the due date.

- Proposed Legislation Review Review proposed criminal justice related local legislation that impacts
  the Bureau's areas of responsibility. Determine positive and negative impacts upon the Territory's
  present and future development. Prepare, as required, written comments, recommendations or
  testimony for the Director with concern for clarity, conciseness and consistency.
- Assisted the Judiciary of Guam in the development and review of the 2007 Comprehensive Approach
  to Sex Offender Registry (CASOM), 2008 Guam Sex Offender SMART Program, and 2011 Adam
  Walsh Act Implementation Grant. These are discretionary funds and the Judiciary of Guam
  application was approved.

Planner I
Bureau of Planning
Socio-Economic Planning Program
Government of Guam

July 29, 1991 to January 29, 1999 P.O. Box 2950 Hagatna, Guam 96932

- Assist the Senior Planner in the preparation, coordination and appraisal of a wide range of plans, policies and studies that further Guam's economic, social and infrastructure goals, priorities and planning activities, more specifically, in the areas of Criminal Justice Planning.
- Assists the Senior Planner in the distribution, collection and analysis of data for a wide range of plans, policies and studies that further Guam's economic, social and infrastructure goals, priorities and planning activities, more specifically, in the areas of Criminal Justice Planning.
- Prepare charts, graphs, and tables to best portray the data for Criminal Justice Statewide Strategic Plan
- Assists the Senior Planner in the implementation of various phases of criminal justice planning research and statistical activities in the collection, organization and analysis of data; and correlates results with applicable specification.
- Assists the Senior Planner in the administering of federal grant funds including establishing funding
  priorities, distribute funds, prepare MOUs monitor sub recipient compliance with federal grant special
  conditions and provisions, and provide ongoing assistance to sub recipients specific to the Byrne
  JAG.
- Assists the Senior Planner in ensuring that the Byrne JAG subgrantees are aware of and in compliance with all programmatic and financial rules through the usage of special conditions and subgrantee monitoring of federal grant funds through desk review, on site, and program assessment of grants.

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• Assists the Senior Planner in the development of the Government of Guam Feasibility Office Space Study by determining descriptive and analytical data requirements and determine data sources required for adequate planning organization, and interpretation. Develop the survey instrument to be used to gather the data from the government agencies leasing office space. Distribute and collect the survey instrument received by the government agencies leasing office space. Follow up the agencies on incomplete forms submitted. Establish and maintain contact with Government of Guam line and autonomous agencies in order to identify and stay abreast of current office space information; and to collect descriptive and analytical data. Identify and analyze charts, tables, and graph that are required to best portray the data and information collected from the survey. Prepare a written assessment of the Executive Branches utilization of office space. Develop and prepare the Feasibility Office Space Studies by the due date.

#### **CONTINUING EDUCATION COURSES**

USDA Graduate School Certificate for Successful Completion of Performance Measurement and Budgeting, October 10 – 17, 2007, 24 Hrs CPE

USDA Graduate School Certificate for Successful Completion of Strategic Planning for Government Organizations, February 25 – 28, 2008, 16 Hrs CPE

USDA Graduate School Certificate for Successful Completion of Performance Based Management System, March 2012, 32 Hrs CPE

U.S. Department of Justice Certificate for Successful Completion of DOJ Grants Financial Management, March 23, 2012, 8 Hrs CPE

USDA Graduate School Certificate for Successful Completion of Grant Management Supercircular Overview, January 12-16, 2015, 24 Hrs CPE

#### **CERTIFICATES**

- US Department of Justice, Bureau of Justice Assistance, Grant Administration Training and Technical Assistance Certificate of Training
- Justice Research and Statistics Association, National Computer Center Certificate for Successful Completion of Computer Graphics for Reports and Presentation Training, April 28, 1992
- US Department of Justice, Office of Justice Programs Certificate for Successful Completion of Financial Management Training Seminar, July 12, 2011
- US Department of Justice, Bureau of Justice Assistance, Project Development and Implementation Training Certificate for Successful Completion of Project Development and Implementation, September 23 - 24, 2002
- US Department of Justice, Bureau of Justice Assistance, Project Development and Implementation Training Certificate for Successful Completion of Project Development and Implementation, February 23 - 24, 2004
- US Department of Justice, Bureau of Justice Assistance, Certificate of Completion of Programs Administration Track, November 30, 2005
- US Department of Justice, Bureau of Justice Assistance, BJA West Regional Conference, December 4 – 6, 2006
- USDA Graduate School Certificate for Successful Completion of Performance Measurement and Budgeting, October 10 – 17, 2007

# Lola E. Leon Guerrero P.O. Box 114 Hagatna, Guam 96932 Email: pldje@teleguam.net Contact Number: (671) 472-1421 (h) ● (671)486-2646

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- USDA Graduate School Certificate for Successful Completion of Strategic Planning for Government Organizations, February 25 28, 2008
- US Department of Justice, Office of Justice Programs, Office of the Chief Financial Officer Certificate for Successful Completion of Regional Financial Management Training Seminar, December 9 – 10, 2009
- USDA Graduate School Certificate for Successful Completion of Grant Management Supercircular Overview, January 12-14, 2015

#### **COMMITTEES**

- Criminal Justice Automation Commission member
- Sex Offender Registry Committee member

#### **COMMUNITY AFFILIATIONS**

Kusinan Karidad – Serves meals one a month for the homeless.

# MANUEL Q. CRUZ

P.O Box 2400 Hagatna, Guam 96932 (671) 789-2197 (671) 735-9129

E-mail: <u>mannycruz64@hotmail.com</u> <u>guamddc@teleguam.net</u>

#### CAREER SUMMARY

Organized and motivated, with over 40 years of extensive broad-based experience in teaching, administration, management, and supervision in a variety of private business endeavors, local and federal government assignments, and high school and college institutional settings. Skilled business manager, skilled government executive, successful labor/management contract practitioner and negotiator, and excellent team leader with a strong background and knowledge in strategic planning, performance-based improvement, change management, goals development and implementation, contract negotiation, marketing strategies, and measurable outcomes and results. Independent and self-directed professional, flexible and energetic, able to cultivate strong relationships with individuals from diverse organizational and cultural backgrounds, and collaborate effectively with team members to achieve overall organizational objectives. Broad understanding of smart business practices, collaboration and networking efforts and quality assurance, internal review, systems improvement, federal labor law, and human resources recruitment activities. Demonstrated success in federal grant applications and federal grants management. Excellent interpersonal communications skills. Detail oriented, strong organizational and analytical skills. Excellent listener; able to assess needs, and able to synthesize and articulate information. Proven history of trouble-shooting and solving complex operational problems. Strong advocate for preventive maintenance work.

# ACEDEMIC EDUCATION

FORDHAM UNIVERSITY, NEW YORK, N.Y.

Major: Education

Degree: Master of Science in Education (M.S.)

ST. JOSEPH'S SEMINARY, YONKERS, N.Y.

Major: Philosophy/History Degree: Bachelor of Arts (B.A.)

Major: Theology

Degree: Master of Divinity (M. Div.)

#### **EMPLOYMENT HISTORY**

1. June 2016 to Present (Bureau of Statistics and Plans)

**Deputy Director** 

Responsibilities include the chief executive officer (CEO) of the Bureau, to include oversite of GovGuam planning requirements, land-use reviews, environmental concerns, census information, and consumer statistical activities. Administer and coordinate the U.S. Department of Justice law enforcement grants and the Coastal Zone Management Program grants. Serve as the voting member of the Western Pacific Regional Fishery Management Council as the Governor's Designated State Officer (DSO).

2. 2013 to 2015 (Department of Labor)

Director

Responsibilities include assisting the Governor's Staff Assistant in the administration and management of the Guam Department of Labor. Identify problem areas and formulate solutions. Review effectiveness and efficiency of various Federal manpower programs and project. Initiate development of administrative and personnel policies and procedures for use in the Labor Department. Review all program planning proposals, grant applications, budget submissions, financial reports, and provide suggestions and recommendations to the Staff Assistant.

3. 2011 to 2013 (Department of Agriculture)

**Deputy Director** 

Responsibilities include assisting programs set up by the Law Enforcement Section in the Division of Aquatic and Wildlife Resources of the Department of Agriculture and the Civil Defense Office that provides the members of the Civilian Volunteer Conservation Officer Reserve training in crime prevention and operational techniques and procedures for natural and man-made emergencies.

4. Feb. 2007 to Dec. 2010 (Guam Developmental Disabilities Council)

**Executive Director** 

Responsibilities include the chief executive office (CEO) of the Council. Assist the Council, its committees and subcommittees, in formulating public policy impacting on individuals with developmental disabilities. Prepare recommended policies; assist in the development of the 5-Year State Plan; assist in the preparation of annual budgets, annual performance reports, and timely resolutions for Council review and approval. Assure that the mandates of the Federal Developmental Disabilities Act are addressed and complied with. Collaborate with state agencies and non-profits in term of advocacy, system change, and capacity building. Consult with policy-makers to insure that the interests and needs of individuals with developmental disabilities are considered and met.

5. 2005-2007 (Guam Housing Corporation)

Deputy Director (Housing Manager)

Responsibilities include assisting the Corporation President in the planning, development and management of the affordable housing loan programs. Assist in the day-to-day operation of the Corporation. Responsible for the management of the OREO Program to insure that foreclosed houses are properly disposed of. Collaborate with the USDA Rural Development in making affordable housing available to low-income applicants and Chamorro Land Trust Commission constituents. Oversee the Corporation's rental housing units.

#### 6. 2004 to 2005 (Guam Housing and Urban Renewal Authority)

#### **Deputy Director**

Responsibilities include the day-to-day administration and operation of the federally funded public housing programs (Public Housing Program and Section 8 Voucher Program). Oversee the various HUD housing grans/loans and cooperative agreements. Has direct supervision of the budget and accounting offices. Serve as the Contracting Officer of the Authority.

#### 7. 2003 to 2004 (Bureau of Statistics and Plans)

#### Director

Responsibilities include the chief executive officer (CEO) of the Bureau, to include oversite of GovGuam planning requirements, land-use reviews, environmental concerns, census information, and consumer statistical activities. Administer and coordinate the U.S. Department of Justice law enforcement grants and the Coastal Zone Management Program grants. Serve as the voting member of the Western Pacific Regional Fishery Management Council as the Governor's Designated State Officer (DSO).

#### 8. 1986-2003 (American Federation of Government Employees, Local 1689)

#### **Union President**

Responsibilities include the chief executive officer (CEO) of Guam's local federal union with over 5,000 bargaining unit members in the local Navy and Air Force military bases, as well as other Department of Defense (DOD) installations and activities. Responsible for handling employee grievances, disciplinary actions, discrimination complaints, unfair labor practices, etc. Represent the union in major management events and ceremonies. Serve as the chief negotiator in various contract negotiations and contract renewals. Serve as a major resource person during the outsourcing of the Navy bases and the implementation of the BRACC in 1995 through 2000. Serve as the Fair Practices Coordinator for the AFGE District 11 that include locals in 7 states in the Northwest U.S. and previously as the fair Practices Coordinator of the former AFGE District 15 that included all overseas locals in Europe and Asia, as well the locals in the Caribbean and in the Pacific.

#### 9. 1963 to 1986 (OICC/Navy Public Works Center, Guam)

#### Program Manager (GS-12)

Responsibilities include the administration and management of the Navy's Capital Improvement Program (CIP) for the U.S. Trust Territory of the Pacific Islands. Responsible for monitoring the various CIP projects as they were completed and closed-out. Assist in the preparation of the completion reports to the U.S. Department of the Interior. Perform

site visits and field inspections as part of the Navy's inspection team. Serve as the internal quality assurance officer for all local Navy construction projects.

#### 10. 1983 (U.S. Navy Ship Repair Facility, Guam)

Management Analyst (GS-11)

Responsibilities include overall command internal review and internal audit. Conduct cost benefit studies and investigate financial discrepancies and inefficiencies. Identify areas of potential fraud, waste and abuse. Work closely with Navy Audit Service in monitoring and correcting troublesome and unsatisfactory conditions in the shipyard.

#### 11. 1981 to 1983 (Agency for Human Resources Development, GovGuam)

#### Director

Responsibilities include the administration and management of the local federal-funded CETA Program. Oversee and direct the planning, implementation, and operation of the \$2 million CETA Program for the Government of Guam. Direct the recruitment and placement of hundreds of participants and trainees in training programs and hands-on jobs. Work closely with the Regional Administrator, USDOL, in resolving program discrepancies and deficiencies. Assist in the settlement of \$8 million of questioned and disallowed costs that were incurred in previous Administrations.

#### 12. 1979 to 1981 (Office of the Lt. Governor)

#### Special Assistant

Responsibilities include oversight and coordination of all GovGuam federal grant-in-aid programs. Prepare operating budget and staffing needs of the Lt. Governor's office. Oversee the Guam State Clearinghouse for the review and approval of Federal grant applications. Administer the Guam Disaster Assistance Office under FEMA. Oversee the YCC/YACC Programs for the Government of Guam.

#### 10. 1977 to 1978 (U.S. Department of Energy, Washington, D.C.)

Program Analyst (GS-13)

Responsibilities include the development and implementation of the Department of Energy policies for the Pacific Islands and Pacific Territories. Serve as the principal specialist on the relations between the Department and the U.S. territories. Work closely with the Energy-Extension Program for fund allocations and fun extension of the territories.

#### 13. 1975 to 1977 (U.S. Department of the Interior, Office of Territorial Affairs)

Staff Assistant (GS-12/13)

Responsibilities include staff advisor and staff specialist to the Director of Territorial Affairs on various programs and activities relating to territorial and insular affairs of Guam and the other U.S. territories. Represent the office on various committees, task forces, and study groups that were responsible for developing Departmental policies and programs. Prepare official correspondence and point papers of the Director in matters that deal with Guam and the other pacific territories. Review and evaluate territorial proposals, requests,

and grant applications. Serve as information officer and Federal Register coordinator. Serve as the YCC and YACC program coordinator and field representative for the territories.

14. 1974 to 1975 (U.S. Department of the Interior, Office of Territorial Affairs)

**Territorial Intern** 

Responsibilities include appointment and assignment to work at the Office of Territorial Affairs under Feral IPA Mobility Program. Assist the Director in management of affairs dealing with the Guam Government. Assist Guam officials in OMB and Congressional hearings. Review Guam's financial proposals, requests, reports, etc., and provide input.

15. 1973 to 1974 (Government of Guam, Office of the Governor)

Deputy Assistant for Manpower

Responsibilities include assisting the Governor's Staff Assistant in the administration and management of the Guam Department of Labor. Identify problem areas and formulate solutions. Review effectiveness and efficiency of various Federal manpower programs and project. Initiate development of administrative and personnel policies and procedures for use in the Labor Department. Review all program planning proposals, grant applications, budget submissions, financial reports, and provide suggestions and recommendations to the Staff Assistant.

16. 1972 to 1973 (Government of Guam, Department of Education)

**Deputy Director** 

Responsibilities include assisting the Director and the Board of Education in formulating major departmental policies and procedures. Advise the Director on fiscal and administrative matters. Responsible for oversight of all departmental personnel staffing and position management. Administer and coordinate the educational activities of the secondary schools. Coordinate all the interscholastic activities. Responsible for finalizing the annual budget and resource requirements of all the secondary schools. Serve as one of the management representatives in the teacher contract negotiations with the Guam Federation of Teachers (GFT).

17. 1965 to 1970 (Diocese of Agana, Catholic School Office)

Superintendent of Catholic Schools

Responsibilities include assisting the Bishop in formulating major educational policies for all parochial schools in Guam and in Saipan. Provide leadership in improvement of Catholic elementary and secondary education in Guam and in Saipan. Responsible for the formulation and standardization of the diocesan school calendar, grading system and diocesan report cards. Initiate and coordinate textbook selection procedures, school busing, and school lunch program with the Government of Guam.

#### PERSONAL INFORMATION

Married (Spouse: Carmen G. Cruz)

Two Children (Melissa Leona Cruz and Charles John Cruz)

# WILLIAM M. CASTRO

wilcastro671@gmail.com • (671) 929-6209 • P.O. Box 21152, Barrigada, Guam 96921

#### **BIO-SKETCH SUMMARY**

### SENATOR | EXECUTIVE & SENIOR LEVEL ADMINISTRATOR | RESEARCHER

Harvard University | Columbia University

Wil Castro is an accomplished planner and evaluator, grants administrator, and executive with both public and private sector experiences. He is currently serving as a Senator in the Thirty-fourth Guam Legislature as Vice Chairman on Education as well as Member on the Committee on Land, Environment, Agriculture and Procurement Reform and on the Committee on Health, Tourism, Military Affairs and Senior Citizens.

Senator Castro is a member of President Trump's Asian Pacific American Advisory Council under the Chairmanship of Guam Governor Eddie Baza Calvo and CNMI Governor Ralph DLG Torres. Senator Castro also serves on several regional as well as territorial policy and planning bodies relative to oceans, fisheries, coastal and coral matters.

Wil attained doctoral candidate status at Teachers College, Columbia University and holds a Master's Degree from Harvard University with additional graduate credits from the Massachusetts Institute of Technology. He also received training in Formative and Summative Assessment, Accreditation and Program Review, and Grantsmanship.

He is the father of four children and is engaged to Debra T. Cabrera, Ph.D., who is the former Dean of Academic Programs at the Northern Marianas College and is currently a Commissioner on the President's Advisory Commission on Asian Americans and Pacific Islanders.

Skills: Proposal writing & project management

Budget formulation and ROI analysis Formative and Summative Evaluative Methods

Graphic Arts Design & Development

Advanced Research Methodology Policy research, writing, and evaluation

The use of New Media in advancement

#### Certificates & Training:

Formative Assessment and Education. South Carolina. (Nov. 2008)

Accreditation and Program Review. WASC (Apr. 2008)

Grantsmanship II- Administrative Requirements and Cost Principles for Grants and Other Agreements (April 2007), USDA Graduate School

Board-Union Labor Negotiations- (1998), Federal Mediation and Conciliatory Service

Teaching Certification in Secondary Social Studies, Vocational and Career Education (Exp. 2010)

#### Policy Body Memberships:

Member, President's Asian Pacific American Advisory Council

Member, United States Coral Reef Task Force

Member, Pacific Islands Regional Planning Body

Head of Delegation, Western and Central Pacific Fisheries Commission

Committee Member, Western Pacific Regional Fisheries Management Council

#### Civic Memberships:

4th Degree Knight, Knights of Columbus-Santa Teresita Council 13373

Honorary Member, Municipal Planning Council Barrigada, Guam

Chairman, Centennial Committee Young Men's League of Guam

#### **SUMMARY OF EDUCATION**

#### **COLUMBIA UNIVERSITY**

Doctoral Candidate\*, Instructional Technology and Media, Spring 2012

\*Doctoral Fellowship Award Recipient (full-ride and stipend for doctorate program)

Certificate courses taken: Advanced Information Technology Management Program 2006

#### HARVARD UNIVERSITY

Masters in Technology in Education\*, June 1997 \*Professional-technical Award Recipient (\$10,000 scholarship per year)

#### **UNIVERSITY OF GUAM**

B.A.Ed., Secondary Education\*, June 1996
\*Guam Teacher Corps. Scholarship Recipient (full tuition and fees with monthly stipend)

#### SUMMARY OF POSITIONS HELD

#### DIRECTOR

Bureau of Statistics and Plans / Government of Guam

#### CHIEF TECHNOLOGY OFFICER (ACTING)

Office of Technology / Government of Guam

#### DIRECTOR

Office of Institutional Effectiveness / Advancement Northern Marianas College / St. John's School

#### **ASSOCIATE SUPERINTENDENT (ACTING)**

Vocational/Technical Education Administrative Services Guam Public School System

#### CHIEF PLANNER/ ADMINISTRATOR (ACTING)

Research, Planning, and Evaluation Guam Public School System

#### **TEACHER / FACULTY MEMBER**

Guam Public School System / St. John's School

# CHIEF POLICY ADVISER/ SENIOR POLICY ANALYST

Guam Legislature (Office of Speaker Judi T. Won Pat) Guam Legislature (Office of Senator Angel L.G. Santos)

#### **SPECIAL ASSISTANT**

University of Guam President, and Chairman

#### GENERAL MANAGER/WEBMASTER

Guam Gifts.com

#### REFERENCES

#### **Professional**

The Honorable Eddie Baza Calvo Governor of Guam

The Honorable Dr. David Leon Guerrero Shimizu (former) Vice Speaker, 29<sup>th</sup>, and Senator, 23<sup>rd</sup> and 22<sup>nd</sup> Guam Legislature (former) Chairman, UOG Board of Regents

#### Character & Leadership

The Honorable F. Phillip Carbullido Associate Justice, Supreme Court of Guam

The Honorable Alberto C. Lamorena III Presiding Judge, Superior Court of Guam

Mr. Bob Pelkey President, Young Men's League of Guam

#### CONTACT INFO AVAILABLE UPON REQUEST



#### RELEVANT PROFESSIONAL EXPERIENCE

01/2017-present 34<sup>th</sup> Guam Legislature Hagatna, Guam

Senator

06/09-present St. John's School Tumon, Guam

Faculty Member and Director of Advancement

Served as a full-time teacher and part-time director for the region's premier pre-k through 12<sup>th</sup> grade college preparatory school. Achievements include the introduction of a Future Knights Merit Scholarship Program, establishment of the Governor's Council on Independent Schools, and initial discussion for the establishment of the Center for Education Statistics and Applied Research.

03/08-06/09 Northern Marianas College --- Office of the President

Director, Office of Institutional Effectiveness

As Terlaje, Saipan

The Office of Institutional Effectiveness (OIE) operates as an administrative support unit under the Office of the President. OIE is primarily responsible for: a) providing leadership and assistance in overseeing assessment activities; b) Facilitating major institutional planning; and, c) preparing official reports for and on behalf the college.

Served as Chairman of the Planning, Program Review, and Outcomes Assessment Committee (PROAC), member of the College Council, Budget and Finance Committee, and co-Chair to the Technology in Education Committee. PROAC is responsible for monitoring and facilitating all college-wide planning and assessment activities. PROAC is also responsible for setting the funding and planning priorities for the College each year.

Served as one of two (2) primary authors for institutional responses to WASC team recommendations concerning governance, planning, program review, and budgeting. Reports include: October 15, 2009 Show Cause Report, December 31, 2009 Supplemental Report, April 1, 2009 Show Cause Report. Primary author of the Institutional Excellence Guide An Organizational Guide to Shared Governance, Planning, Assessment, and Budgeting that was adopted by the College Council and accepted by the President, and the Board of Regents. Lead writer for the drafting of the Planning, Program Review, and Budgeting Manual (May, 2009).

11/07-03/08	Guam Public School System Office of the Superintendent Associate Superintendent, Vocational/Technical Education (Acting) (Assigned acting capacity beginning November, 2007)	Hagatna, Guam
08/07-11/07	Associate Superintendent, Administrative Services (Acting) (Assigned acting capacity beginning August, 2007)	Hagatna, Guam
05/07-08/07	Administrator, Research, Planning and Evaluation Division (Acting) (Assigned collateral title in June, 2007 to cover all non-academic areas of operation)	Hagatna, Guam
05/07-05/07	Chief Operations Officer (Assigned collateral title in June, 2007 to cover all non-academic areas of operation)	Hagatna, Guam
01/07-03/08	Chief Planner (Promotion from Program Coordinator IV, January, 2007)	Hagatna, Guam
05/06-01/07	Program Coordinator IVFederal Programs Division (Promotion from Teacher status, May, 2006)	Hagatna, Guam
01/06-05/06	Teacher III Untalan Middle School	Barrigada, Guam

Part of a management team of the Guam Public School System (GPSS) overseeing a local budget of approximately \$220 million inclusive of federal funded program eligibility approximating \$50million

by 19 divisions.  Excellence in Education  Foundation  Excellence  Concerns	ritory. GPSS is a public K-12 education system serving Primary author and architect of several initiatives a cation agenda for change. Select initiatives include: n for Public Education e in Education agenda for change ommunity, Employee Relations Team scellence in Education Employee Recognition program lue Ribbon Schools program	
☐ Ambitious ○ Co ○ Ro ○ K ○ D ○ W	s technology agenda comprehensive Technology Audit evised Technology Master Plan attan Technology Center Pilot Project ocument Management Project 'ebsite redesign and construction approved student-to-computer ratio district-wide	
□ Represent □ Member, S □ Project An Federal Pr □ Chairman □ Member, S □ Lead Adm □ Primary S □ Primary S □ Staff Liais	er for several initiatives for and on behalf of the Superinterative to Governor's Civilian-Military Impact Committee Superintendent's Management Team rehitect/Writer for the "High-Risk" Comprehensive Corograms and Technology Master Plan Committee (August 2006-200 Computerized Management & Maintenance System projectionistrator, Facilities and Maintenance Strategic Planning taff Liaison, Buildings and Grounds Committee, Guam Education, Technology Committee, Guam Education, Technology Committee, Guam Education Policy Boort, Budget, Finance and Administrative Affairs Committee, Guamed	e, Subcommittee on Education rrective Action Plan (CAP) for 7) ect team g Committee Education Policy Board ation Policy Board oard
activities. The proassigned. Demon responsibility for compliance report Also responsible for Strategic For Guam Public Technology	an administrative position responsible for directing all ogram coordinator IV position is supervisory level with strated commitment, work ethic and professional compoverall planning, coordination, synthesis and writing of s in addition to development of the budget narrative s for authorship or major contributing author to major plant activities and Maintenance Plan allow School System-Corrective Action Plantage Master Plantage and Objectives	support staff for each program petencies have led to delegated f Consolidated Grant quarterly ince initial date of assignment.
08/03-01/06	GuamGifts.com Founder, President & General Manager/Webmaster	Barrigada, Guam
operations of Guam partnerships with m within several altern (revenues, expenses capable in designing	nanaging director responsible for overall strategy developed's #1 and fastest growing e-tailer. With the largest selective ajor channel partners, GuamGifts.com is poised for premium active markets. Responsible for inception, management and go and investments) in excess of \$200,000 in past 18months go, implementing and managing: E-Commerce systems, online e community sites. Highly proficient in graphic arts designated and the strategy of the s	on of local products and strategic in product and service provisioning rowth of start-up with total monies is. Knowledgeable and technically e databases, dynamic and/or static
08/01-12/02	Twenty-Seventh Guam Legislature	Hagatna, Guam

#### Senior Policy Analyst (ginen I Ufisinan Senadot Angel L.G. Santos)

Drafting of laws, policies, constituent reports, news releases, marketing material, and responsible for review of all official correspondence and recommendations for action. Served as the primary point-of-contact for all media, public officials and constituency groups.

#### 01/01-08/01 & Board of Regents, University of Guam Mangilao, Guam 08/97 - 08/99Special Assistant to the Chairman and President Principally assigned to advise and serve the chairman of the board and president on all matters brought to the attention of the board and executive offices of the university. Responsible for research and analysis of board policy, development and practice; for the review and production of board agenda and support documents; and the advising of regents on course of action. Trained by the Federal Mediation and Conciliatory Service. Highly knowledgeable and experienced in: Academic, Personnel and Tenure matters Governance, promotion, grievances and arbitration Budget, Finance and Program Review University budget development, review, presentation and defense Scholarship Criteria for selection, management and tracking of recipients Student Affairs Student leadership and governance Presidential Search and Evaluation Search Modality (Committee set-up, Guidelines, Selection Criteria, Contract Negotiation) Board-Union management agreements 0 Review, evaluation and negotiation of matters between management and union membership Protocol University, Local and State official protocols Project Management, Fundraising, Accreditation Review **EDUCATION** COLUMBIA UNIVERSITY Doctoral Candidate\*, Instructional Technology and Media, Fall 2009 \*Doctoral Fellowship Award Recipient (full-ride and stipend for doctorate program) Certificate courses: Advanced Information Technology Management Program 2006 HARVARD UNIVERSITY Masters in Technology in Education\*, June 1997 \*Professional-technical Award Recipient (\$10,000 scholarship per year) **UNIVERSITY OF GUAM** B.A.Ed., Secondary Education\*, June 1996 \*Guam Teacher Corps. Scholarship Recipient (full tuition and fees with monthly stipend) ACADEMIC AWARDS AND LEADERSHIP RECOGNITION(S) Civic Award Plaque of Recognition for Leadership, Lions Club Int'l Tumon, GU 1999 Civic Award "Outstanding Young Men of America" 1998 Washington DC **Harvard University** Cambridge, MA Dean's Award: Exemplary Leadership and Service Sp. 1997 Certificate of Achievement: Native American Program Certificate of Appreciation: Student Association Cabinet

SERVICE AND CONTRIBUTION AS A MEMBER OF THE BOARD OF REGENTS

RELATIVE TO COMMENDING WILLIAM CASTRO ON HIS OUSTANDING

Mangilao, GU

July 18, 1996

University of Guam Board of Regent's Resolution 96-23

#### 24th Guam Legislature, Committee on Rules Resolution No. 338 Hagatna, GU RELATIVE TO COMMENDING WILLIAM CASTRO ON HIS June 27, 1996 ACCOMPLISHMENTS AND ACCEPTANCE TO HARVARD UNIVERSITY **University of Guam** Mangilao, GU Graduated with honorable recognition **Cum Laude** Dean's List Fa. 1993- Sp. 1996 Guam Teachers Corps. Scholarship Recipient Fa. 1994-Sp. 1996 Regent Scholar Fa. 1995-Sp. 1996 President's List Sp. 1996 Who's Who in American Colleges and Universities Sp. 1996 Sp. 1996 Pi Sigma Alpha, Member: Inducted "Best Student Organization of the Year Award" AY 1994-1995 -Founder and President, Islander Foundation of Informed Leaders SAMPLE OF MAJOR GRADUATE PAPERS WRITTEN "Networking in Higher Education: Commonalities in Four-year Liberal Arts Institutions" "VIDEO CONFERENCING: Using technology to bridge the gap" "ISP Competitive Analysis: A Summative Evaluation of an Internet Service Provider Homepage" "A Formative Evaluation of Learning from Thin Air A Harvard-Smithsonian Project" An Introspective Analysis of University Governance at the Univ. of Guam IT strategy for a university using collaborative software and communication-ecological principles **COMMUNITY SERVICE ACTIVITIES** Untalan Middle School Parent Teacher Organization Current President St. John's Parent Teacher Organization Current Volunteer UOG Alumni Assoc. 2005-2007 Secretary Lions Club International (District 204, IFIL Club) 2000 Founder/Member/Officer Communications, Comp. & Tech in Ed. Stud. Org. 2000 Webmaster (Teachers College, Columbia Univ.) Lions Club International (District 204, IFIL Club) 1999 Charter President of Guam IFIL Lions Club Chairman [raised \$26K; 1,100 persons attended] Second Annual Charter Day Banquet 1999 1998 UOG Alumni Golf Classic Volunteer 1998 **UOG Alumni Association Fund Drive** Committee Member [brochure author and webmaster] Harvard University Indigenous Peoples Organization 1997 Co-coordinator Harvard University, Student Association Cabinet 1997 Representative Univ. of Guam Student Government Association 1994-96 Senator, Vice President, Student Regent RELEVANT COURSES IN SUPPPORT OF APPLICATION School Business Administration Columbia University 1999-2001 Ecology of Data-Driven Leadership Columbia University 1999-2001 School Finance Columbia University 1999-2001 Columbia University 1999-2001 Technology & School Restructuring Strategic Planning in Higher Education Harvard University 1996-1997 Higher Education Administration Harvard University 1996-1997 Public Policy in Higher Education Harvard University 1996-1997 Law, Technology & Public Policy Massachusetts Institute of Technology 1997 Technology, Education & Public Policy Columbia University 1999-2001 Intro to Management Systems Columbia University 1999-2001

Columbia University 1999-2001

Probability and Statistical Inference

Real World Research	Columbia University	1999-2001
Formative and Summative Evaluation	Harvard University	1996-1997
	•	
Instructional Design	Harvard University	1996-1997
Cognition and the Art of Instruction	Harvard University	1996-1997
Creating Educational Experiences using	Harvard University	1996-1997
Networks & Webs		

# MATCH WAIVER REQUEST



Eddie Baza Calvo Governor of Guam

Ray Tenorio
Lieutenant Governor

Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932

Tel: (671) 472-4201/3 Fax: (671) 477-1812



Manuel Q. Cruz
Deputy Director

MAY 0 1 2017

Mr. Craig Reid Grants and External Funding Coordinator NOAA Coral Reef Conservation Program Office for Coastal Management 1305 East West Hwy, 10th floor SSMC4, N/ORM1 Silver Spring, MD 20910

Re: Guam's FY 17-18 Coral Reef Conservation Program Match Waiver Request

Dear Mr. Reid:

The Bureau of Statistics and Plans is requesting a waiver to the matching funds requirement contained in section 6403(b)(2) of the Coral Reef Conservation Act of 2000 in the amount of \$303,949. Guam can provide an in-kind match of \$101,265 for thirty five percent of the Planner I and Chief Planner's time. The Planner I in the Socio Economic Planning Program will be directly involved in assisting in the coordination and implementation of the Support for Public Outreach and Education. The Chief Planner will provide support to the Coral Reef Resilience Coordinator in the implementation of FY 17-18 CRCP Cooperative Agreement such as preparation of the quarterly progress reports, reprogramming request, establishment of the Grant Award, review and compliance with the SACS, and implementation of the programmatic agreement. Although, BSP is showing an in-kind match we are unable to show a cash match and or in-kind match for the \$358,949 due to the following criteria:

- 1. No reasonable means are available through which Guam can meet the matching requirement, and
- 2. The probable benefit of such outweighs the public interest in such matching requirement.

Pursuant to 48 U.S.C. 1469a(d), NOAA shall waive the matching requirement for \$200,000 for each of the proposed FY17 and FY18 State and Territory Coral Reef Conservation Agreement Grant award. The grant requested exceeds the \$200,000 matching funds waiver limit. Section III (B) of the CRCP State and Territorial Coral Reef Conservation Cooperative Agreements Funding Guidance:

1) FY17 requires the submittal of a match waiver request for the additional \$210,403; (\$460,214-\$49,811 in-kind match-\$200,000=\$210,403). Non-federal matching funds have been identified in the program and project entitled, Coral Reef Resilience Coordinator and Support for Public Outreach and Education, respectively.

2) FY18 requires the submittal of a match waiver request for additional \$148,546; (\$400,000-\$51,454 in-kind match-\$200,000=\$148,546) in the final application.

I want to take this opportunity to thank you in advance for your kind and favorable consideration of this request.

Should you require additional information, please contact myself or Ms. Lola E. Leon Guerrero at 671-472-4201/2/3

Sincerely,

WILLIAM C. MCDONALD

**Acting Director** 

# NEGOTIATED INDIRECT COST RATE AGREEMENT



# United States Department of the Interior



INTERIOR BUSINESS CENTER Indirect Cost Services 650 Capitol Mall, Suite 7-400 Sacramento, CA 95814-4706

January 4, 2017

Mr. Jose S. Calvo, Director Bureau of Budget and Management Research Government of Guam P.O. Box 2950 Hagatna, Guam 96932-2950

Dear Mr. Calvo:

Enclosed is the signed original Negotiated Indirect Cost Rate Agreement that was processed by our office. If you have any questions concerning this agreement, please refer to the signature page for the name and contact number of the negotiator.

As a recipient of federal funds, the regulations require you to maintain a current indirect cost rate agreement. For provisional/final indirect cost rates, Indirect Cost Proposals should be submitted on an annual basis, and they are due within six (6) months after the close of your fiscal year. For predetermined rates and approved rate extensions, proposals are due in our office six (6) months prior to the expiration of your current rate agreement. Please note that proposals are processed on a first-in, first-out basis.

# Common fiscal year end dates and proposal due dates are listed below:

Fiscal Year End Date	Proposal Due Date
September 30 <sup>th</sup>	March 31st
December 31st	June 30 <sup>th</sup>
June 30 <sup>th</sup>	December 31st

Please visit our website for guidance and updates on submitting future indirect cost proposals. The website includes helpful tools such as a completeness checklist, indirect cost and lobbying certificates, sample proposals, Excel worksheet templates, and links to other websites.

Sincerely,

Office Chief (A)

Enclosure

Ref: J:\Other (Territorial)\Guam\Guam Government (Ggovg001)\FY 2016C\Issue.ltr.docx

Phone: (916) 930-3803 Fax: (916) 930-3804

Email: ICS@ibc.doi.gov

Website: http://www.doi.gov/ibc/services/finance/Indirect-Cost-Services

# State and Local Governments Indirect Cost Negotiation Agreement

EIN: 98-0018947

#### Organization:

Government of Guam Bureau of Budget and Management Research P.O. Box 2950 Hagatna, Guam 96932-2950 Date: January 4, 2017

Report No(s): 17-A-0363

Filing Ref.:

Last Negotiation Agreement dated November 24, 2015

The indirect cost rates contained herein is for use on grants, contracts, and other agreements with the Federal Government to which 2 CFR Part 200 applies for fiscal years beginning on or after December 26, 2014 subject to the limitations in Section II.A. of this agreement. Applicable OMB Circulars and the regulations at 2 CFR 225 will continue to apply to federal funds awarded prior to December 26, 2014. The rates were negotiated by the U.S. Department of the Interior, Interior Business Center, and the subject organization in accordance with the authority contained in applicable regulations.

Section I: Rate

Page 1 of 2

	Effective Period				Applicable
Туре	From	То	Rate*	Locations	To
		4 4			
Fixed Carryforward	10/01/15	09/30/16	1.47%	All	AHRD
Fixed Carryforward	10/01/15	09/30/16	38.65%	All	Stats/Plans
Fixed Carryforward	10/01/15	09/30/16	3.60%	All	Agr. (PR/DJ)
Fixed Carryforward	10/01/15	09/30/16	12.61%	All	GBWHC
Fixed Carryforward	10/01/15	09/30/16	8.78%	All	Mil Affairs
Fixed Carryforward	10/01/15	09/30/16	47.07%	All	Parks & Rec.
Fixed Carryforward	10/01/15	09/30/16	26.00%	All	DPHSS
Fixed Carryforward	10/01/15	09/30/16	40.58%	All	Public Works
Fixed Carryforward	10/01/15	09/30/16	5.35%	All	DISID
Fixed Carryforward	10/01/15	09/30/16	20.25%	All	Youth Affairs
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	CAHA
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Energy
Fixed Carryforward	10/01/15	09/30/16	9.81%	All	GEPA
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Library
Fixed Carryforward	10/01/15	09/30/16	0.31%	All	Governor
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Child Support
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Crime Victims
Fixed Carryforward	10/01/15	09/30/16	5.86%	All	DRT
Fixed Carryforward	10/01/15	09/30/16	0.00%	All	Police
Fixed Carryforward	10/01/15	09/30/16	4.32%	All	Labor
Fixed Carryforward	10/01/15	09/30/16	8.80%	All	Homeland Sec.

\*Base: Total direct salaries and wages, excluding fringe benefits. The rate applies to all programs administered by the non-federal entity. To determine the amount of indirect costs to be billed under this agreement, direct salaries and wages should be summed and multiplied by the rate. All other program costs, including fringe benefits associated with direct salaries and wages, should be eliminated from the calculation.

Treatment of fringe benefits: Fringe benefits applicable to direct salaries and wages are treated as direct costs; fringe benefits applicable to indirect salaries and wages are treated as indirect costs.

#### Section II: General

Page 1 of 2

- A. Limitations: Use of the rate(s) contained in this agreement is subject to any applicable statutory limitations. Acceptance of the rate(s) agreed to (1) no costs other than those herein is predicated upon these conditions: incurred by the subject organization were included in its indirect cost rate (2) all such costs are the legal obligations grantee/contractor, (3) similar types of costs have been accorded consistent treatment, and (4) the same costs that have been treated as indirect costs have not been claimed as direct costs (for example, supplies can be charged directly to a program or activity as long as these costs are not part of the supply costs included in the indirect cost pool for central administration).
- B. Audit: All costs (direct and indirect, federal and non-federal) are subject to audit. Adjustments to amounts resulting from audit of the cost allocation plan or indirect cost rate proposal upon which the negotiation of this agreement was based will be compensated for in a subsequent negotiation.
- C. Changes: The rate(s) contained in this agreement are based on the organizational structure and the accounting system in effect at the time the proposal was submitted. Changes in organizational structure, or changes in the method of accounting for costs which affect the amount of reimbursement resulting from use of the rate(s) in this agreement, require the prior approval of the responsible negotiation agency. Failure to obtain such approval may result in subsequent audit disallowance.

#### D. Rate Type:

- 1. Fixed Carryforward Rate: A fixed carryforward rate is based on an estimate of the costs that will be incurred during the period for which the rate applies. When the actual costs for such periods have been determined, an adjustment will be made to the rate for future periods, if necessary, to compensate for the difference between the costs used to establish the fixed rate and the actual costs.
- 2. Provisional/Final Rates: Within six (6) months after year end, a final indirect cost rate proposal must be submitted based on actual costs. Billings and charges to contracts and grants must be adjusted if the final rate varies from the provisional rate. If the final rate is greater than the provisional rate and there are no funds available to cover the additional indirect costs, the organization may not recover all indirect costs. Conversely, if the final rate is less than the provisional rate, the organization will be required to pay back the difference to the funding agency.
- 3. Predetermined Rate: A predetermined rate is an indirect cost rate applicable to a specified current or future period, usually the organization's fiscal year. The rate is based on an estimate of the costs to be incurred during the period. A predetermined rate is not subject to adjustment. (Because of legal constraints, predetermined rates are not permitted for Federal contracts; they may, however, be used for grants or cooperative agreements.)

- E. Rate Extension: Only final and predetermined rates may be eligible for consideration of rate extensions. Requests for rate extensions of a current rate will be reviewed on a case-by-case basis. If an extension is granted, the non-Federal entity may not request a rate review until the extension period ends. In the last year of a rate extension period, the non-Federal entity must submit a new rate proposal for the next fiscal period.
- F. Agency Notification: Copies of this document may be provided to other federal offices as a means of notifying them of the agreement contained herein.
- G. Record Resping: Organizations must maintain accounting records that demonstrate that each type of cost has been treated consistently either as a direct cost or an indirect cost. Records pertaining to the costs of program administration, such as salaries, travel, and related costs, should be kept on an annual basis.
- H. Reimbursement Ceilings: Grantee/contractor program agreements providing for ceilings on indirect cost rates or reimbursement amounts are subject to the ceilings stipulated in the contract or grant agreements. If the ceiling rate is higher than the negotiated rates in Section I of this agreement, the negotiated rates will be used to determine the maximum allowable indirect cost.
- I. Use of Other Rates: If any federal programs are reimbursing indirect costs to this grantee/contractor by a measure other than the approved rate(s) in this agreement, the grantee/contractor should credit such costs to the affected programs, and the approved rate(s) should be used to identify the maximum amount of indirect cost allocable to these programs.
- J. Central Service Costs: If the proposed central service cost allocation plan for the same period has not been approved by that time, the indirect cost proposal may be prepared including an amount for central services that is based on the latest federally-approved central service cost allocation plan. The difference between these central service amounts and the amounts ultimately approved will be compensated for by an adjustment in a subsequent period.

#### K. Other:

- 1. The purpose of an indirect cost rate is to facilitate the allocation and billing of indirect costs. Approval of the indirect cost rate does not mean that an organization can recover more than the actual costs of a particular program or activity.
- 2. Programs received or initiated by the organization subsequent to the negotiation of this agreement are subject to the approved indirect cost rate(s) if the programs receive administrative support from the indirect cost pool. It should be noted that this could result in an adjustment to a future rate.
- 3. Indirect cost proposals must be developed (and, when required, submitted) within six (6) months after the close of the governmental unit's fiscal year, unless an exception is approved by the cognizant agency for indirect costs.

## Section III: Acceptance

Listed below are the signatures of acceptance for this agreement:

By the State & Local Government:

Government of Guam

State/Local Government

Signature JOSE S. CALVO

Name (Type or Print)

DIRECTOR

Title

11.23.16

Date

By the Cognizant Federal Government Agency:

U.S. Department of the Interior

Agency

Signature

Deborah A. Mober

Name

Office Chief (A)

Office of Indirect Cost Services

Title

U.S. Department of the Interior

Interior Business Center

Agency

JAN 0 4 2017

Date

Negotiated by Marilyn P. Elgar Telephone (916) 930-3811

## DATA AND INFORMATION SHARING PLAN

## **Guam Data and Information Sharing Plan**

# 1. Type of environmental data and information to be created during the course of the project

Critical coral reef monitoring data, including data for water quality, benthic habitat and associated biological community parameters, are collected on an annual to biennial basis at several priority reef areas around Guam. The bulk of the data generated include field observations and digital images; a limited number of spatial data layers are generated, including site boundaries and transect locations. The data collected enable coral reef managers to determine the status and trends in selected coral reef ecosystem indicators and to inform the effective management of Guam's coral reef resources.

## 2. The types of collection methods

The data are collected using a stratified random sampling design and the combined use of both fixed and non fixed sampling stations. Monitoring sites are located at reef areas designated as high priority by reef managers. Site boundaries are determined using remotely sensed data and in situ observations, with the aim of minimizing habitat variability within the site. The locations of sampling stations are generated randomly within the site boundaries using a Geographic Information System (GIS). Data collection is carried out by University of Guam biologists, including the Monitoring Coordinator and technical staff, as well as the NOAA PIRO Coral Reef Ecologist for Guam. Field surveys include photo transects for benthic cover, chain length method for rugosity, quadrats for coral colony size/ condition, stationary point count method for the reef fish community, and belt transects for the macro invertebrate community. Water temperature data is recorded using data loggers installed at most sites. Additional water quality data will be collected using temperature/conductivity loggers and multiparameter datasondes.

## 3. Tentative date by which data will be shared

The fish, coral, and macroinvertebrate data are entered into the Guam Coral Reef Monitoring database by the observer within two weeks after collection. To ensure data integrity all database records are compared against the raw data by the Coral Reef Monitoring Technician or the Monitoring Coordinator; this quality control process will be completed within 6 weeks of data collection. The quality-controlled macroinvertebrate, reef fish, and coral quadrat data will be available within two months after data collection. In order to generate benthic cover estimates the photo transect images are analyzed using the program CPCe. Image analysis will be completed within 4 months of data collection. Upon completion of the image analysis, output files generated by the application are automatically added to the data management system using an ingestion script developed by the NOAA Coral Reef Ecosystem Program. Updates to existing metadata and the development of new metadata for the fish, coral quadrat, and macroinvertebrate data will be submitted to CoRIS within 10 weeks of data collection, and within five months after collection of the photo transect images.

## 4. Standards to be used for data/metadata format and content

Field survey and data management protocols have been developed in order to facilitate consistency and maintain a high degree of data integrity. Field observation data are stored in a remotely-accessible relational database that requires a quality analysis/quality control process to be carried out before data entry is considered final. Metadata for field observation data, geospatial datasets, and associated metadata are developed using standards set out in the document "Technical Guidelines for Metadata Preparation" and Federal Geographic Data Committee standards.

## 9. Policies addressing data stewardship and preservation

Collected data collected are stored within a relational database at the Department of Administration's Data Services Division. A backup of the contents of the virtual server (e.g., the relationship database, the web application, and related applications and data) is housed off-site. Copies of the relational database are obtained by NOAA CREP on a regular basis in order to ensure that a current backup of the database is housed at an off-island location.

#### 6. Procedures for providing access to data and prior experience in publishing such data:

Data are not currently available online, and plans to develop an online data sharing application have been halted due to the lack of funding. As a result, data can currently only be obtained upon request. Data discovery is facilitated through CoRIS, to which metadata records for each dataset are submitted. It is not clear if a web-based data sharing application will eventually be developed. The Monitoring Program Coordinator will continue to communicate with NOAA CREP staff. Once a data sharing component of the web application is developed, end users will be able to discover data sets through internet searches and download data sets via the web application; links to the web application will be provided on the monitoring program website, University of Guam Marine Laboratory website, the Guam Bureau of Statistics and Plans website, and other websites to widen internet exposure.

The results of analyses of data collected at the long-term monitoring sites and other data collected by the monitoring program are included in technical reports submitted to NOAA. Although the data collected from the long-term monitoring sites have not yet been used in peer reviewed studies, coral bleaching response data collected by members of the monitoring team have been used in a master's thesis and in a recently published peer reviewed article. Additional peer-reviewed articles are in prep or planned, including analyses of data collected at the long-term monitoring sites. All relevant information gathered through Monitoring Program efforts will also be incorporated into the Guam chapter of the next NOAA Status of the Coral Reef Ecosystems of the U.S. and Freely Associated States report. This information will also be presented in newsletters, such as the *Man, Land, and Sea newsletter*, blogs, social media, and will be incorporated into a variety of other outreach and education efforts.

## NEPA QUESTIONS AND RESPONSES

#### **NEPA QUESTIONS**

## **Comprehensive Long Term Monitoring at Permanent Sites on Guam**

**Question C1.** Is the proposed activity going to be conducted in partnership with NOAA or would the proposed activity require NOAA's direct involvement, activity, or oversight? If yes, describe NOAA's involvement, activity, or oversight, including the name of the office or program that is involved.

The program is funded in its entirety through the NOAA Coral Reef Conservation Program, and a key member of the monitoring team is a Coral Reef Ecologist with the NOAA Pacific Islands Regional Office – Guam Field Office. The program has received technical support from the NOAA Coral Reef Ecosystem Program, and will likely continue to receive technical support CREP.

**Question C2.** Would the proposed activity involve any other Federal agency(ies) partnership, direct involvement, activity, or oversight? If yes, provide the name(s) of the agency(ies) and describe its involvement, activity, or oversight.

No.

**Question D1.** Provide a brief description of the location of the proposed activity. The location of the scientific research project activity and non scientific activity is as follows:

Coral reef surveys are carried out on a regular basis at high priority reef areas around Guam, including Tumon Bay, East Agana Bay, Piti Bay, Western Shoals (Apra Harbor), Fouha Bay, Achang Bay, and Cocos Barrier Reef. Surveys are restricted to the seaward reef slope at depths between 7 and 15 meters for the Tumon, East Agana, Piti, Achang, and Cocos sites; surveys are carried out at various depths and across multiple reef zones at the Fouha Bay and Western Shoals sites. Surveys are carried out at multiple sampling stations within the boundaries of each site. Approximately half of these sampling stations are permanently marked and are re-randomized for each sampling year. Surveys are carried out along a single 25 m transect at each sampling station. Surveys include photo transects for benthic cover, quadrats for coral colony size/condition, belt transect for commercially and ecologically important macroinvertebrates, and stationary point counts for reef fish.

**Question E1.** List any Federal, state, or local permits, authorizations, or waivers that would be required to complete the proposed activity. Provide the date the permit, authorization, or waiver was obtained or will be obtained. Provide copies of the permit, authorization, or waiver as appropriate. Was a NEPA analysis prepared for the permit, authorization, or waiver? If yes, state the title of the NEPA analysis and provide copies of the NEPA analysis.

 USACE Nationwide Permit No. 5, Scientific Measurement Devices; 20 July 2010; File No. POH-2010-00118 (Tumon)

- USACE Nationwide Permit No. 5, Scientific Measurement Devices; 16 November 2010; File No. POH-2010-00257 (East Agana)
- USACE Nationwide Permit No. 5, Scientific Measurement Devices; 13 December 2011; File No. POH-2011-00329 (Piti and Western Shoals)
- USACE Nationwide Permit No. 5, Scientific Measurement Devices; 13 March 2015; File No. POH-2015-00018 (Achang), POH-2015-00022 (Cocos-East), POH-2015-00023 (Fouha)
- Guam Department of Agriculture Division of Aquatic and Wildlife Resources Special Permit for Scientific Collection in MPA Guam; 1 February 2015
- Endangered Species Act Section 7 consultation with the National Marine Fisheries Service; 12 July 2010
- Guam Coastal Management Program Federal Consistency determination; 9 November 2009
- Guam Coastal Management Program Federal Consistency determination; 12 February 2015
- Guam Historic Preservation Office Section 106 consultation; 22 January 2015

A NEPA Checklist for Proposed Actions (attached) was prepared by the NOAA Coral Reef Conservation Program, with review by the Guam Long-term Monitoring Program Coordinator, in March 2010. It was determined that the proposed action fell within the Coral Reef Conservation Grants Program Programmatic Environmental Assessment and required no further environmental review.

**Question F1**. Is there the potential for the proposed activity to cause changes that would be different from normal ambient conditions (for example, temperature, light, turbidity, noise, other human activity levels, etc.)? If yes, describe the changes and the circumstances that would cause these changes.

No.

## GUARDIAN OF THE REEF SURVEY INSTRUMENT

## **Guardians of the Reef Program- Presentation Evaluation**

Scale: 5 = Excellent, 4=Good, 3=Satisfactory, 2=Needs Improvement, 1=Poor

Presentation Skills: Evaluate ALL presenters together as a whole	Circle the appropriate rating				
Clearly communicates the subject matter		4	3	2	1
2. Uses visuals appropriately	5	4	3	2	1
3. Validates students' questions and comments	5	4	3	2	1
4. Remains focused on topic	5	4	3	2	1
5. Actively engages audience	5	4	3	2	1
6. Well Organized	5	4	3	2	1
Overall Impression		4	3	2	1

- 1. How many students are in your class today?
- 2. Did you prepare your students prior to the scheduled presentation on topics related to corals, coral reef ecosystems, sedimentation/erosion or any other environmentally related topics?

If yes, which topics did you discuss?

- 3. Did the Guardians provide your class with any materials (i.e. handouts/Guardians of the Reef Pledge Card)? Do you expect these to be useful?
- 4. How can we better align Guardians of the Reef with your curriculum, the common core, or other standards your students are responsible for learning?
- 5. Do you have any feedback regarding the scheduling process for Guardians of the Reef? (i.e. the timeframe, time of year, establishing steady POC's)
- 6. Would you recommend Guardians of the Reef to other educators?
- 7. Please share any additional comments regarding the Guardians of the Reef program constructive criticism is encouraged!

## RESUME AND OR CURRICULUM VITAE

## ANNA ELLINGBOE SIMEON

Driven and personable up-and-coming biologist with 5+ years of experience executing research and field work in many challenging environmental conditions. Passionate about conservation and a fantastic presenter with extensive teaching, organizational, and outreach experience.

Skills & Abilities	In-depth knowledge of Guam's natural resources and local conservation initiatives (Coral Reef Initiative, Micronesia Biosecurity Plan, Micronesia Challenge, etc.) Top-notch presenter and collaborator with exceptional communication skills Adept at collecting, compiling, and organizing environmental data Experienced analyzing data using GIS, R, and Excel				
Education	University of Guam	Graduated December 2016			
	Masters of Science - biology				
	University of California, San Diego	Graduated June 2009			
	Bachelor of Science – Ecology, Behavior, and Evolution				
	Sea Education Association	October 2007 – January 2008			
	Oceans and climate program – Class 2014				
Select Relevant	Advanced Statistical Methods*	Environmental Challenges:			
Courses	Advances in Ecology*	Science and Solutions <sup>†</sup>			
* = UOG	Biometry <sup>†</sup>	GIS for Scientists and Engineers <sup>†</sup>			
† = UCSD	Conservation and the Human Predicament <sup>†</sup>	Marine Botany*			
	Economics of the Environment <sup>†</sup>	Marine Invertebrate Ecology <sup>†</sup>			
	Environmental Biology and Ecology*	Ocean Science and Policies <sup>†</sup>			
Experience	Biologist: Coral Reef Watershed Coordinator  Bureau of Statistics and Plans, Government of Guam  Work with federal and local partners to develop conservation projects for the Manell-Geus watershed and surrounding reefs in Southern Guam				
	Lead and coordinate invasive bamboo removal project to address flooding problems in Merizo village  Co-manage fire break construction around forest restoration projects  Lead tours of different reefs, rivers, and forests to the public for outreach purposes				
	Lead tours of different feets, fivers, and for	esis to the public for outleach purposes			

#### Experience Cont. Environmental Consultant

May 2015 - Present

Self-Employed through Sole Proprietorship

Work with local partners to complete a variety of projects including genetic sequencing and analysis, benthic image analysis, and many kinds of terrestrial and marine field surveys

Research Assistant

January 2011 - Present

University of Guam Marine Laboratory - Lab of Dr. Tom Schils

Collect data and install instruments via SCUBA and snorkeling

Analyze large datasets and genetic information for Sea Grant Invasive Species Project

Organize and maintain UOG Marine Herbarium (14,000+ specimens)

Monitor water quality from sewage outfalls by monthly water sampling

Monitor reef health through surveys for Department of Defense CESU grant

#### Internship

#### October 2010 - December 2010

CARMABI Research Station, Curação, Netherland Antilles

Coordinated travel and research logistics with 10 other researchers

Collected reef monitoring data by transect sampling, underwater photography, and water testing

Maintained various research equipment and operated small skiffs

#### Marine Science and Watersports Instructor

January 2009– August 2010

Mission Bay Aquatic Center - San Diego, California

Managed classes and summer camp programs for children and adults of all ages Taught school-aged kids about local ecology and watershed importance for coastal communities

Developed and implemented new lesson plans and activities for summer camp Maintained and replaced equipment as necessary

## **Teaching Assistant**

January - June 2009

Conservation and the Human Predicament, UCSD

Introduction to Biological Oceanography, UCSD

Prepared course materials and led discussion sessions with 30+ university students Coordinated with instructor and TA's about scheduling and course material logistics

Developed, assigned, and evaluated coursework

#### Senior internship

**January 2009 – June 2010** 

Scripps Institution of Oceanography – Conducted with Dr. Stuart Sandin and Dr. Debbie Szmarzly

Compiled all published data regarding energy flow through coral ecosystems Converted all data to comparable format and analyzed to determine whole-reef estimates of energy dynamics within reef ecosystems

Used new information to design and update exhibit information for Birch

## Aquarium

Volunteer Assistant Aquarist

**January 2008 – August 2008** 

Birch Aquarium at Scripps - San Diego, California

Interacted with visitors and encouraged ocean conservation through exhibit interpretation

Coordinated with head aquarists to design and build new habitats and improve water systems

Maintained aquaria and inhabitants

Student / Assistant Scientist

October 2007 – January 2008

Sea Education Association – Woods Hole, Massachusetts

Gathered and analyzed data for a wide variety of studies and projects Gained extensive experience in oceanographic field research techniques

Lived six weeks on board 135' research sailing ship SSV Robert C. Seamans

# Presentations and Outreach

2016 International Coral Reef Symposium

Presented thesis research about Micronesia algae genetic diversity and biogeography

National Park Service "Science Sunday" Series - March 2014

Invited to speak about the role of algae on Guam's coral reef ecosystems and my research, focusing on invasive species detection and new species discovery using genetic techniques

SeaGrant Website - November 2013

Article accepted for national NOAA SeaGrant website: "Hide and Seek: Unearthing Micronesia's Lurking Invaders" (View at: http://goo.gl/JmQ2Bc)

2013 Pacific Islands Environment Conference: Guam Coral Reef Symposium

Hyatt Regency, Tumon, Guam

Presented poster entitled: "Unrecognized Algal Diversity in the Western Pacific: A Case Study of the Genus *Actinotrichia*"

## Presentations and Outreach continuation

2012 Symposium for Human Well-Being and the Marine Environment in the Pacific

University of the Ryukyus, Okinawa, Japan

Presented research: "Using DNA barcoding to discover cryptic diversity in potential invasive species"

Ongoing – Organizing and leading tours of Marine Lab

*University of Guam – Marine Laboratory* 

Coordinate with various organizations and graduate students to provide educational tours of the UOG Marine Laboratory to on- and off-island groups

Leadership	Site Coordinator for International Coastal Cleanup in 2012, 2013, and 2014 President of Board of Directors for Poksai canoe club					
	Spearheaded fundraising campaign among local paddling teams to allow Yap National Team to participate in 2014 Micronesian Cup					
	Continuing coordination to provide UOG Marine Lab tours to public					
	Coordinated speaker schedules for UOG POETS Seminar series in 2012					
Additional Certifications	PADI Advanced Diver with 250+ dives logged					
	Emergency First Responder: CPR/AED/First Aid (expires October 2015)					
	Emergency Oxygen Provider (expires October 2015)					
	California Safe Boating certificate (completed in 2009)					

#### Whitney C. Hoot

PO Box 5009 Mangilao, Guam 96923 whitney.hoot@gmail.com 671-686-1699

#### **Research interests**

Coral reef restoration; trophic interactions on coral reefs; marine protected area establishment and management; biotic and abiotic factors influencing coral bleaching susceptibility

#### **Education**

MS, conservation biology with concentration in marine science (GPA 3.81), University of Maryland, College Park (2015)

- Capstone: Restoring dynamite blasted reefs with transplanted alcyonaceans
- University Teaching and Learning Program (Associate level)

BA, sociology with minor in environmental science (GPA 3.58), Barnard College, Columbia University (2010)

- Thesis: Youth, the environment, and online networks: How local cyber-communities reflect the public sphere
- Athena Leadership Scholars Program

Other coursework:

- Intro to Tropical Biology, 4 grad credits, Organization for Tropical Studies, University of Costa Rica (2015)
- Cities in the 21<sup>st</sup> Century, 16 undergrad credits, International Honors Program (2008)
- Summer Ecosystem Experience for Undergraduates, 6 undergrad credits, Columbia University (2008)

GRE: 168 verbal, 98<sup>th</sup> percentile; 158 math, 74<sup>th</sup> percentile; 6.0 writing, 99<sup>th</sup> percentile (2012)

#### **Professional experience**

NOAA National Coral Reef Management Fellow

Jan 2016 – Present

Bureau of Statistics and Plans, Government of Guam

 Primary duties include writing and implementing the island-wide Guam Coral Reef Resilience Strategy; coordinating the Guam Coral Reef Response Team and developing response plans to address acute threats to Guam's reefs; and collecting and analyzing data on coral bleaching impacts.

Temporary Research Associate, Seascapes Program

Apr 2015 – May 2015

Conservation International, Virginia

• Conducted research on novel technologies for MPA management and enforcement and produced an in-depth cost analysis of using unmanned aircraft for MPA surveillance.

Coral Reef Ecology and Data Analysis Intern

Jun 2014 – Sep 2014

World Wildlife Fund, Washington DC

 Analyzed benthic and fish data collected during baseline surveys of two Indonesian MPAs and prepared a technical report on monitoring methods and survey results.

Citizen Science Outreach Coordinator

Jan 2013 – Jul 2013

Smithsonian Environmental Research Center, Maryland

• Recruited, trained, and managed public participants in environmental research projects and assisted in planting 20,000 trees in the first large-scale experimental tree plantation in the USA.

Program Officer; Climate Adaptation, Disaster Risk Reduction, and Education Program Sep 2011 – Aug 2012

International Organization for Migration, Micronesia

• Educated over 3,000 students and educators on climate adaptation and hazard awareness; recruited and supervised three staff members; prepared the final report to USAID following the pilot project; and developed a 3-year work plan for the AusAID funded \$3 million expansion of the program in the Federated States of Micronesia and the Republic of the Marshall Islands.

Policy and Communications Intern

May 2011 - Jul 2011

Conservation Society of Pohnpei, Micronesia

Built a vision and structure for CSP's new policy program; improved communication strategies
within the education program; and assisted in preparation of a successful \$150,000 proposal to
the Packard Foundation.

Research/Communications Intern

Sep 2009 – Jul 2010

Brighter Green, New York

• Conducted research for publications on climate change, agriculture, and global food security; wrote blog posts; and produced white papers using Adobe InDesign.

## **Volunteer experience**

Visiting Researcher and Reef Restoration Volunteer

Jun 2015 – Jul 2015

Tropical Research and Conservation Center, Malaysia

 Designed and conducted an independent experiment evaluating the use of transplanted alcyonaceans to stabilize rubble slopes; trained volunteers in scientific diving and lectured on coral reef ecology; developed skills in artificial reef construction, coral transplantation, PIT survey methods, and fish and benthic ID.

Researcher and Grant Writer

Aug 2011 – Aug 2015

Island Research and Education Initiative, Micronesia

 Contributed research and writing to books and other educational materials focused on the natural environments of Micronesia and wrote proposals to fund a project to preserve endangered languages.

#### **Teaching experience**

**Teaching Assistant** 

Aug 2014 – Dec 2015

College of Agriculture and Natural Resources, University of Maryland, College Park

Developed innovative lessons for ENSP 101: Intro to Environmental Science and ENSP 102: Intro to Environmental Policy; led weekly discussion sessions each semester with 20-25 students per section; lectured 125-175 students on oceanography, marine biology, marine pollution, and policy topics.

Volunteer High School Teacher (WorldTeach)

Jul 2010 – Jun 2011

Pohnpei Island Central School, Micronesia

• Taught Algebra II to three classes of 30+ high school seniors each semester; developed lesson plans and hands-on activities using the 5E model; and co-founded the College Prep Program.

#### Additional teaching and outreach experience

Docent, Sant Ocean Hall, Smithsonian Natural History Museum, Washington DC

Feb 2015 – Nov 2015

Snore and Roar Tour Guide, Smithsonian National Zoo, Washington DC

Jun 2014 – Aug 2014

K-5 Science Instructor, Hands On Learning Services, Maryland

Oct 2012 - Dec 2015

Advanced Reading Instructor, Upward Bound Program, Micronesia

Nov 2010 – May 2011

Senior Math Tutor, Upward Bound Program, Micronesia

Nov 2010 – May 2010

Teaching Assistant, Environmental Science I and II, Barnard College, New York

Sep 2009 – May 2010

#### **Mentoring**

Masters committee: Nicole M. Burns, MS candidate in biology (expected 2017), University of Guam

• Thesis: Using resilient populations to mitigate bleaching mortality of staghorn *Acropora* 

Masters committee: Marylou K. Staman, MS in biology (2016), University of Guam

• Thesis: Nesting patterns of the green sea turtle (*Chelonia mydas*) on Andersen Air Force Base, Guam

Co-mentor for NOAA Hollings intern: Alexis Sturm, BS candidate in biology (expected 2017), University of Miami

Project: Examining coral disease and physical damage along human use gradients in Tumon Bay,
 Guam

#### **Publications and reports**

Semmler R, **Hoot WC**, Reaka ML (2016) Are mesophotic coral ecosystems distinct communities and can they serve as refugia for shallow reefs? *Coral Reefs*. doi: 10.1007/s00338-016-1530-0

Spivy AL, **Hoot WC**, Hart DE, Sykora-Bodie S, Panuncio M, and Fish M (2014) Prioritization of marine turtle nesting beaches in the Wider Caribbean. Final report to the World Wildlife Fund. 87 p

#### **Professional meetings**

13th International Coral Reef Symposium: Bridging science to policy, Hawaii (2016)

• Poster: Stabilizing dynamite-blasted reefs with transplanted alcyonaceans

Save Our Reefs: Reef Safe Tour Operator Meeting, Guam Coral Reef Initiative, Guam (2016)

- Presented an intro to coral reef ecology and an overview of the Eyes of the Reef Program
- 36<sup>th</sup> US Coral Reef Task Force Meeting, Guam (2016)
  - Meeting participant

Coral Bleaching Symposium, Bureau of Statistics and Plans, Guam (2016)

- Meeting organizer; presented an introduction of the Guam Coral Reef Response Team, overview of the Coral Bleaching Response Plan, and tutorial for use of NOAA Coral Reef Watch products 7<sup>th</sup> Annual Island Sustainability Conference: Islanded Communities, Center for Island Sustainability, Guam (2016)
  - Meeting participant

Understanding ecological and social resilience in island systems: Informing policy and sharing lessons for management, Center for Biodiversity and Conservation, American Museum of Natural History, New York (2013)

• Poster: The abandonment of Sorol

Shrinking, sinking, resurfacing: Small islands and natural hazards in historical and current perspectives, Rachel Carson Center for Environment and Society, Ludwig Maximilian University of Munich, Germany (2012)

• Oral: The abandonment of Sorol: The first complete depopulation of a Micronesian atoll in modern history

Australia Pacific Partnership for Development Annual Bilateral Talks in the Republic of the Marshall Islands and Federated States of Micronesia, Marshall Islands (2012)

- Presented on the expansion of IOM's CADRE program in these two countries Federated States of Micronesia Annual Public Health and Hospital Emergency Preparedness Summit, Chuuk (2012)
  - Presented on the CADRE program and its connections to public health

World People's Conference on Climate Change, Bolivia (2010)

Panelist: Environmental impacts of industrialized agriculture in India

## Awards and honors

NOAA National Coral Reef Management Fellowship (2016 – 2018)

Dr. Devra Kleiman Memorial Graduate Award, Department of Biology, University of Maryland, \$5000 (2015)

Rowe Family Foundation Scholarship Fund, Organization for Tropical Studies, \$200 (2015)

Japan Travel Program for US Future Leaders, Japan Foundation Center for Global Partnership (2014)

Maryland School of Public Policy Internship Award, University of Maryland, \$2500 (2014)

Graduate School Special International Travel Award, The Graduate School, University of Maryland, \$500 (2014)

Travel Award, College of Computer, Mathematical, and Natural Sciences, University of Maryland, \$800 (2014)

Department of Biology Travel Award, University of Maryland, \$300 (2014)

Sustainable Development and Conservation Biology Alumni Fund Award, University of Maryland, \$300 (2014)

State of Maryland Delegate Scholarship Awards, \$3900 (2013, 2014, 2015)

Seward Scholarship for Leadership, National Alpha Delta Phi Society (2008, 2009)

Barnard Student Leadership Award, Barnard College, Columbia University (2008, 2009)

#### Skills and certifications

Software/statistical methods: ArcGIS, JMP, R, SigmaPlot, Excel, Microsoft Access, ImageJ, Adobe Photoshop

Ecological survey methods: Line intercept transects, point intercept transects, coral quadrats, timed swims and belt transects for coral diversity, coral disease and other health impacts, and macroinvertebrates PADI Divemaster (2016)

PADI Emergency Oxygen Provider (2016)

Emergency First Responder, primary and secondary (2016)

Teaching English as a Foreign Language certification (2010)

#### **Training and workshops**

Coral Reef Report Card Workshop, NOAA Coral Reef Conservation Program, Guam (2017)

Results Based Accountability Training, NOAA Fisheries and Clear Impact LLC, Guam (2016)

Participatory GIS Mapping Workshop, NOAA Office for Coastal Management, Guam (2016)

Project Design and Planning for Meaningful Evaluation Training, NOAA Office for Coastal Management, Guam (2016)

Coral Identification Workshop, Coral Identification Capacity Building Program and BYOGuides, Honolulu (2016)

Intro to Reef Resilience and Advanced Studies in Reef Resilience, The Nature Conservancy, online courses (2016)

Oceania Regional Response Team/US EPA Abandoned and Derelict Vessel Workshop, Guam (2016) Guam Coastal Climate Change Resilience Workshop, University of Guam Marine Laboratory, Guam (2016)

Community Based Disaster Risk Management, Earthquakes and Megacities Initiative, online course (2012)

Climate Change Adaptation Outreach and Planning Training, Micronesia Conservation Trust and the Pacific Islands Climate Education Partnership, Pohnpei (2012)

Community Partnerships for Climate Change Education and Adaptation Workshop, Pacific Islands Climate Education Partnership, Pohnpei (2011)

## **Science communication**

Newspaper articles:

- With the help of a tiny robot, scientists deepen support for a Mariana Trench sanctuary (goo.gl/ZP4eQW)
- Bringing back our birds: Small wins add up in the battle against brown tree snakes (goo.gl/ygeYS7)
- A Guam without coral reefs: Can Guam's coral reefs survive climate change? (goo.gl/Ahzvdo)

## Blog posts:

- Understanding the maturity gradient in environmental science and management (goo.gl/EEFDX0)
- Meditations in a premontane rainforest (goo.gl/CZHSE3)

#### Podcast:

 Co-wrote and produced: Potentially treacherous science adventures with Liz and Whitney (goo.gl/F8GRlo)

#### SUMMARY OF QUALIFICATIONS

- Coordinates Government of Guam's long-term coral reef monitoring program
- Supervises four biologists
- Multiple years of experience working with various Government of Guam and federal natural resource management agencies and non-governmental organizations on a range of coastal resource management issues
- Extensive training and experience with coral reef research design, survey techniques, and data analysis
- Expert knowledge of Guam's coral reefs and other reefs in the region, including condition and threats, identification of coral species, reef fish species, and other reef-associated organisms
- Carries out coral reef assessments on Guam and other locations in Micronesia as part of local, regional, and federal teams of professional scientists
- Graduate training in marine science and environmental policy/economics; specific training in coral reef ecology and coral reef management
- Specialist in scleractinian coral taxonomy
- Experience teaching Introduction to Marine Biology course and Introductory, Advanced, and Special Topics in Geographic Information System courses at Guam Community College
- Experience applying GIS tools/remote sensing data to coastal management issues on Guam
- Experience teaching spatial technology concepts and skills to users of various experience levels
- Experienced PADI Divemaster with more than 1600 dives
- Possesses Dept. of Interior/NOAA Motorboat Operator Certification, including Open Water module training
- Exceptional writing and verbal communication skills

#### **EDUCATION**

M.S. in Environmental Studies, 3.9/4.0 GPA
 The Graduate School at the College of Charleston, SC

• B.A., Major in Biology, 3.61/4.0 GPA *Hiram College, Hiram, OH* 

May, 1999

May, 2006

## RECENT WORK EXPERIENCE

Research Associate III, University of Guam Marine Lab, Guam, Oct. 1, 2013 - Present

- Primary responsibilities include coordinating Guam's Long-term Coral Reef Monitoring Program and providing technical support to Government of Guam natural resource agencies in coral reef monitoring and management-related matters
- Additional responsibilities include participation in the Guam Coral Reef Rapid Response Program, including the development of response plans for groundings, spills, coral bleaching, storms, coral disease outbreaks, and *Acanthaster planci* outbreaks, as well as participating in assessments and monitoring with the Rapid Response Team after disaster events.
- Coordination of Guam long-term coral reef monitoring program involves supervising a full-time NOAA technical support specialist and three part-time monitoring assistants (all of whom are biologists; usually seeking graduate degree in marine biology); coordinating development of updated monitoring strategy; developing federal grant proposals, including development of program budget; procurement of equipment and supplies; directing, and participating in, coral reef surveys; carrying out and/or supervising data analysis; publishing reports detailing results of monitoring program; designing and carrying out research projects associated with monitoring program; providing recommendations for management actions based on results of monitoring program; and conducting outreach and education activities related to monitoring program, such as classroom visits, festival participation, radio and television appearances, and contributing articles to printed media
- Technical support provided to Government of Guam natural resource agencies involves the review of

Environmental Impact Assessments, Federal Consistency Applications, and other environmental documents; providing scientific advice when requested and assisting in development of coral reef management strategies and policies; providing technical support and guidance for various GIS projects; and participating in education and outreach activities

- Conducted coral community surveys at numerous sites around Guam as part of a University of Guam-led effort to document a severe coral bleaching event; approximately 36 dives were carried out between Oct. 3 and Dec. 6, 2013
- Collected coral community data and reviewed draft report for a 2015 NOAA Pacific Islands Regional Office project aimed at detecting changes in coral and benthic community structure along a sediment gradient in Fouha Bay
- Served as Co-Principle Investigator with Dr. Jeffrey Maynard on the 2016-2017 NOAA Saltonstall-Kennedy grant-funded project "Assessing the relative resilience of coral reefs and herbivorous fish communities to climate change in U.S. territories to inform ecosystem-based fisheries management"; contributed to project development, assisted with project administration, trained Guam-based field personnel, organized field logistics, carried out fish surveys, and contributed to development of project products
- Served as thesis committee member for multiple students

## Biorepository Manager, University of Guam, July 1 - Present

- Coordinating development of publicly-accessible Biorepository online database and associated protocols
- Responsible for curation of specimens and samples collected as part of the NSF EPSCoR-funded Guam Ecosystem Collaboratorium research program
- Responsible for integration of existing University of Guam Marine Lab biological specimen collections into Biorepository database

#### Marine Resources Consultant, Sole-proprietorship, February 2014 - Present

- Completed survey of corals and other marine organisms and contributed to report for Piti Channel submerged pipeline repair project led by Dr. Alex Kerr for Duenas, Camacho, and Associates, February 2014
- Developed report with assistance of Dr. Peter Houk that served as basis of the Marine Habitats chapter for the CNMI Division of Fish and Wildlife's Wildlife Conservation Strategy, May-August 2015
- Completed surveys of corals, fish, and invertebrates in Saipan, Tinian, and Rota and contributed to development of report required for landing of new Docomo-Pacific telecommunications cables as subcontractor to Dr. Peter Houk and Duenas, Camacho and Associates, June-October, 2016
- Completed coral survey and developed report for the AJC Segment 6 repair project at Tanguisson, Guam as subcontractor to Duenas, Camacho, & Associates, June-October 2016

### Guide/Naturalist, Coral Triangle Adventures, Inc.,

• Served as snorkeling guide and naturalist on live-aboard expedition to the Raja Ampat region of Indonesia from October 6-22, 2016; will serve as guide for a February 2017 trip to Raja Ampat and a Fiji/Solomon Islands trip in 2018

**Special Projects Coordinator,** *Government of Guam Bureau of Statistics and Plans - Guam Coastal Management Program, Guam, Jan.* 2007 – Sept. 2013:

- Primary responsibilities included coordinating Guam's Long-term Coral Reef Monitoring Program; reviewing
  Environmental Impact Assessments and Federal Consistency Applications; coordinating the development of
  the Guam section of the NOAA State of the Reefs reports; providing scientific advice to Guam Coastal
  Management Program administrator and assisting in development of coastal management-related strategies
  and policies; providing technical support and guidance for various GIS projects; participating in education
  and outreach activities; and providing assistance to partnering agencies on a range of projects.
- Additional responsibilities included participation in the Guam Coral Reef Rapid Response Program, including the development of response plans for groundings, spills, coral bleaching, storms, coral disease outbreaks, and *Acanthaster planci* outbreaks, as well as participating in assessments and monitoring with the Rapid Response Team after disaster events.

- Coordination of Guam long-term coral reef monitoring program involved supervising a full-time NOAA technical support specialist and three part-time monitoring assistants (all of whom are biologists; usually seeking graduate degree in marine biology); coordinating development of updated monitoring strategy; developing federal grant proposals, including development of program budget; procurement of equipment and supplies; directing, and participating in, coral reef surveys; carrying out and/or supervising data analysis; publishing reports detailing results of monitoring program; designing and carrying out research projects associated with monitoring program; providing recommendations for management actions based on results of monitoring program; and conducting outreach and education activities related to monitoring program, such as classroom visits, festival participation, radio and television appearances, and contributing articles to printed media
- Conducted coral colony size and condition surveys at multiple outer island sites between Chuuk and Yap as part of the Federated States of Micronesia Climate Change Vulnerability Self-Assessment, March 28-April 13, 2010
- Conducted coral biodiversity surveys in Apra Harbor, Guam, as part of U.S. Fish and Wildlife Service-led team; surveys were part of Navy-funded study comparing two coral reef assessment approaches; approximately 40 dives were carried out from May 8-11 and from May 26 June 5, 2009
- Conducted benthic community surveys as part of NOAA Marianas Archipelago Rapid Assessment and Monitoring Program's 2009 research cruise; surveys were conducted around Guam, Rota, Tinian, Aguihan, and Saipan from the NOAA ship Hi'ialakai: 34 dives were carried out from April 5-15, 2009
- Conducted benthic community surveys at the Min Don Rye grounding site near Falcona Beach, Guam, on Jan. 21, June 10, and June 12, 2009; surveys were carried out as part of biological assessment required by U.S. Army Corps of Engineers prior to removal of vessel.
- Developed Bureau of Statistics and Plans Dive Program; serves on Dive Control Board and as Dive Safety Officer

## **Adjunct Faculty,** *Guam Community College, Jan.* 2011 – December 2013:

- Instructor for SU250: Introduction to Geographic Information Systems (Fall 2011, Fall 2012), SU251: Advanced Geographic Information Systems (Spr 2011, Spr 2012), and SU280: Special Topics in Geographic Information Systems courses (Spr 2012)
- Instructor for *SI103/SI103L: Introduction to Marine Biology* lecture and lab (Spr 2012, Fall 2012, Spr 2013, Fall 2013)
- Developed course materials, including individual lesson plans, lectures, exercises, and exams

# **NOAA Pacific Islands Assistant – Guam,** *NOAA/Environmental Careers Organization, Government of Guam Bureau of Statistics and Plans, Guam, Jan. 2004 - Jan. 2007:*

- Primary goal of position was to enhance local spatial technology capacity within Guam's coastal management community; this was achieved through regular GIS training sessions, through work on mapping/research projects, through the development of a spatial data infrastructure document for Guam and through the development of strategies for further improving and sustaining capacity.
- Designed and developed a printed, CD-ROM, and web-based version of the Guam Coastal Atlas, which provides benthic habitat data and other information relevant to coastal issues on Guam; development of the atlas also included creating the benthic habitat data using heads-up digitization of IKONOS imagery and ground-truthing using a GPS receiver.
- Provided weekly GIS training sessions and Introduction to GIS workshops for Government of Guam, federal, and NGO employees; assisted NOAA Coastal Services Center instructors with GIS and remote sensing courses; and provided spatial technology support for various Government of Guam and federal agencies.
- Developed benthic habitat data for parts of Palau as part of University of Guam Marine Lab project to map Essential Fish Habitat

# **Geographic Information Systems Technician,** *Perot Systems Government Services, NOAA Coastal Services Center, Nov., 2002 - Dec., 2003:*

• Primary responsibilities included data layer creation using remotely sensed data and heads-up digitizing,

- map/layout production using ArcGIS 8.x and Arcview 3.x software, and website design and maintenance.
- Other responsibilities included technical and content editing support for training course development, metadata creation/updating, and software application testing.

#### Biological Science Technician, USDA Forest Service Southern Research Station, Feb. - Nov., 2002:

- Primary responsibility involved preparing soil samples and standards for CHN analysis
- Additional responsibilities involved performing HCl, ammonium acetate, and Bray extractions for cation analysis and maintaining sample inventory

## Field Technician/Intern, Enviroscience, Inc., June - July, 2001; June - Aug, 1998:

- Assisted in mussel surveys in the Allegheny River in Warren, PA and in Middle Island Creek near Sisterville, WV (2001) as part of a professional aquatic survey team.
- Participated in the translocation of endangered species of freshwater mussels threatened by impending bridge reconstruction projects in Kennerdell and Utica, PA (1998).

# **Environmental Educator/Scuba Program Manager,** Forfar Field Station, Andros Island, Bahamas, Aug., 1999 - May, 2001:

- Guided interpretive tours at land and sea locations as well as assisted professional scientists on research projects.
- Lectured to students of various ages about marine species/ecology, performed lab activities with students, and performed field station operations.
- Manager of scuba program from Jan 2000 to May 2001; responsibilities included leading safe and educational dives for divers of all experience levels, driving dive boats, and operating compressors.

#### **PUBLICATIONS**

- Minton, D., D. Burdick, and V. Brown. In prep. Changes in coral community structure across a sediment gradient in Fouha Bay, Guam.
- Raymundo, L., D. Burdick, V. Lapacek, R. Miller, V. Brown. In press. Anomalous temperatures and extreme tides: Guam staghorn *Acropora* succumb to a double threat. Marine Ecology Progress Series.
- Fenner, D. and D. Burdick. 2016. Field identification guide to the threatened corals of the U.S. Pacific Islands. NOAA National Marine Fisheries Service, Pacific Islands Regional Office, Protected Resources Division
- Houk, P., and D. Burdick. 2016. Marine biological assessment for the Docomo Pacific ATISA Guam-CNMI cable system. Technical report prepared for Duenas, Camacho & Associates.
- Burdick, D. 2016. Coral survey for the AJC Segment 6 repair project at Tanguisson, Guam. Report prepared for Duenas, Camacho, & Associates.
- Burdick, D. and P. Houk. 2015. Marine habitats of the Commonwealth of the Northern Mariana Islands. Report prepared for the CNMI Department of Lands and Natural Resources Division of Fish and Wildlife.
- Randall, R., and D. Burdick. In preparation. Zooxanthellate Scleractinian Corals of the Mariana Islands.
- Reynolds, T., D. Burdick, P. Houk, L. Raymundo, S. Johnson. 2014. Unprecedented coral bleaching across the Mariana Archipelago. Coral Reefs 33: 499.
- Kerr, A., and D. Burdick. 2014. Biological survey of the Shell Guam, Inc., submerged pipeline crossing, Piti Channel, Guam. Report prepared for Duenas, Camacho, & Associates.
- Contributing author in Danko, T. (ed.). 2013. Environments of Guam. Bess Press, Honolulu, Hawai'i.
- Minton, D., D. Burdick, J. den Haan, S. Kolinksi, and T. Schils. 2009. Comparison of a photographic and in situ method to assess the coral reef benthic community in Apra Harbor, Guam. Prepared for Naval Facilities Engineering Command Pacific, Pearl Harbor, Hawai'i.
- Burdick, D. 2008. The effectiveness of macroalgal reduction and *Diadema antillarum* addition in limiting macroalgal growth and facilitating coral recovery. Proceedings of the 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008.
- Goldberg, J., K. Adams, J. Albert, J. Asher, P. Brown, V. Brown, D. Burdick, B. Carroll, P. Craig, D. Fenner, C. Fillmed, V. Fread, M. Gawel, A. George, Y. Golbuu, L. goldman, C. Graham, A. Hall, M. Hasurmai, L.

- Jacob, D. Jacobson, E. Joseph, J. Kenyon, W. Kostka, T. Leberer, M. Luckymis, E. Lundblad, S. Malakai, J. Maragos, A. Marcus, S. Marino, D. Mathias, J. McIlwain, J. Miller, D. Minton, M. Nadon, S. Palik, N. Pioppi, L. Raymundo, B. Richards, M. Sebater, R. Schroeder, P. Schuup, E. Smith, A. Takesy, and B. Zgliczynski. 2008. Status of Coral Reef Resources in Micronesia and American Samoa: 2008. pp. 199-212. In: Wilkinson (ed.), Status of Coral Reefs of the World: 2008.
- Burdick, D., V. Brown, J. Asher, C. Caballes, M. Gawel, L. Goldman, A. Hall, J. Kenyon, T. Leberer, E. Lundblad, J. McIlwain, J. Miller, D. Minton, M. Nadon, N. Pioppi, L. Raymundo, B. Richards, R. Schroeder, P. Schupp, E. Smith, and B. Zgliczynski. 2008. Status of the Coral Reef Ecosystems of Guam. Bureau of Statistics and Plans, Guam Coastal Management Program. iv + 76 pp.
- Burdick, D., V. Brown, J. Asher, M. Gawel, L. Goldman, A. Hall, J. Kenyon, T. Leberer, E. Lundblad, J. McIlwain, J. Miller, D. Minton, M. Nadon, N. Pioppi, L. Raymundo, B. Richards, R. Schroeder, P. Schupp, E. Smith, and B. Zgliczynski. 2008. The State of the Coral Reef Ecosystems of Guam. pp. 465-509. In: J.E. Waddell and A.M. Clarke (eds.), The State of the Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. NOAA Technical Memorandum NOS NCCOS 73. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team. Silver Spring, MD. 569 pp.
- Burdick, D. 2006. Guam Coastal Atlas (CD-ROM Version). University of Guam Marine Laboratory, Multimedia Publication No. 4.
- Burdick, D. 2006. Top-down experimental manipulation of Bahamian patch reef communities: Macroalgal reduction and *Diadema antillarum* additions. Master's Thesis. Master of Environmental Studies Program, The Graduate School at the College of Charleston.
- Burdick, D. 2005. Guam Coastal Atlas (Printed Version). University of Guam Marine Laboratory, Technical Report 114. 149 pages
- Kelty, R., J. Kuartei, T. Abraham, M. Beger, D. Burdick, E. Cochrane, P. Craig, G. Didonato, D. Fenner, A. Green, Y. Golbuu, J. Gutierrez, M. Hasurmai, C. Hawkins, P. Houk, D. Idip, D. Jacobson, E. Joseph, T. Keju, J. Kuareti, S. Palik, L. Penland, S. Pinca, K. Rikim, J. Starmer, M. Trianni, S. Victor, and L. Whaylen. 2004. Status of the Coral Reefs in Micronesia and American Samoa. pp. 381-409. In: Wilkinson (ed.), Status of Coral Reefs of the World: 2004, Vol. 2.

#### **TRAINING**

- PRIMER 7 statistical software training, March 14-18, 2016, Ponte Vedra Beach, FL
- Reef Resilience and Responding to Climate Change Workshop for Trainers, June 3-7, 2011, Palau
- U.S. Coast Guard Auxiliary Boating Skills and Seamanship Training, Feb. 11-Mar. 4, 2011, Guam
- Improving Data Collection, Storage, Handling, Visualization, and Analyses for Micronesia's Coral Reef Monitoring Programs, Nov. 8-12, 2010, Saipan, Commonwealth of the Northern Mariana Islands
- Dive Xtra Underwater Scooter Training, Oct. 25-29, 2010, Guam
- Coral Crime Scene Investigation Training, June 14-18, 2010, Guam
- Watershed and Stormwater Management Training, conducted by the Center for Watershed Protection, Feb. 11-13, 2008, University of Guam
- NOAA Natural Resource Damage Assessment Training, Nov. 4-6, 2008, Guam Hilton Hotel
- *Lidar Data Application*, conducted by U.S. Army Corps of Engineers, April 21-23, 2008, University of Guam Water and Environmental Research Institute
- Assessment and Management of Coral Reefs, July Aug., 2007, University of Guam Marine Laboratory, 6 credit-hr. graduate-level course taught by multiple instructors
- Responding to Climate Change: A Workshop for Coral Reef Managers, Aug. 27 30, 2007, American Samoa; workshop developed and conducted by NOAA Coral Reef Conservation Program, the Great Barrier Reef Marine Park Authority, the Nature Conservancy, and the World Bank/Global Environment Facility's Coral Reef Targeted Research Program
- Central Pacific Coral Disease Workshop: Protocols for Assessment, Monitoring, and Outbreak Investigation, Feb. 27 Mar. 3, 2007, University of Guam Marine Laboratory; workshop conducted by multiple instructors
- ArcIMS Workshop, Feb. 22 24, 2006, Honolulu, HI
- Fundamentals of ERDAS Imagine I, Nov. 14 16, 2005, Instructor-led training, Las Vegas, NV
- Fundamentals of ERDAS Imagine II, Nov. 17 18, 2005, Instructor-led training, Las Vegas, NV

- Facilitative Leadership Training, June 9, 2005, Maui, HI
- Coastal Applications of GIS, May 27-28, 2004, University of Guam Marine Laboratory, Guam
- Pacific Islands Technical Assistantship: Technical Training Session, May 10-14, 2004, NOAA Coastal Services Center, Charleston, SC
- Geodatabase Basics, Aug. 21, 2003, Coastal Services Center, Charleston, SC
- Remote Sensing for Spatial Analysts, July 30 31, 2003, NOAA Coastal Services Center, Charleston, SC
- Coral Reef Ecology Course, July Aug., 2002, Bermuda Biological Station for Research
- Bahamas Ecotourism and Adventure Travel Certificate, 4.0/4.0 GPA, Aug. Nov., 1999, Hocking College and Forfar Field Station, Andros, Bahamas
- PADI Divemaster and Rescue Diver Training, Nov. 1999, Forfar Field Station, Andros, Bahamas

#### CONFERENCE / WORKSHOP PARTICIPATION

- Presented "The status of Guam's shallow coral reefs" at the 36<sup>th</sup> U.S. Coral Reef Task Force business meeting, Guam, Sept. 23
- Presented at and participated in the Pacific ESA-listed Coral Species Identification Workshop, Honolulu, HI,
- Presented "Home is where the waves are: Corals in Guam's exposed reef fronts are resilient to local stressors but vulnerable to regional warming" at the 13th International Coral Reef Symposium, June 25-26, 2016
- Co-contributor for presentation, "An ounce of prevention: Building rapid response capacity for acute reef impacts on Guam," presented by Valerie Brown, 13<sup>th</sup> International Coral Reef Symposium, June 19-24, 2016
- Co-contributor for presentation, "Guam's staghorn Acropora populations require managing for resilience," presented by Valerie Lapacek, 13<sup>th</sup> International Coral Reef Symposium, June 19-24, 2016
- Co-contributor for poster presentation, "Let the reef be your guide: An adaptive approach to monitoring on Guam," presented by Roxanna Miller, 13<sup>th</sup> International Coral Reef Symposium, June 19-24, 2016
- Presented "Home is where the waves are: Corals in Guam's exposed reef fronts appear resilient to local stressors but vulnerable to regional warming at the 2016 Island Sustainability Conference, Guam, April 11-15, 2016
- Co-contributor for presentation, "Quantifying coral bleaching impacts in Guam's species rich shallow reef zone", presented by Travis Reynolds, Guam Coral Reef Symposium, April 14, 2015
- Co-contributor for presentation, "Back-to-back bleaching episodes result in extensive loss of shallow staghorn Acropora in Guam", presented by Dr. Laurie Raymundo, Guam Coral Reef Symposium, April 14, 2015
- Co-contributor for presentation, "Let the reef be your guide: Adaptive monitoring techniques", presented by Roxanna Miller, Guam Coral Reef Symposium, April 14, 2015
- Served as a local organizer and lecturer for 2014 SECORE (SExual COral REproduction) Guam Workshop, July 14-24, 2014, University of Guam Marine Lab/Underwater World
- Presented "A quantitative description of Guam's reef front coral communities and a preliminary analysis of their robustness to local stressors" at the 2014 Asia-Pacific Coral Reef Symposium, June 23-27, 2014, Taiwan
- Served as local organizer and lecturer for 2013 SECORE (SExual COral REproduction) Guam Workshop, July 25-Aug 3, 2013, University of Guam Marine Lab/Underwater World
- "Where are Guam's canaries in the coal mine? Mapping the island's staghorn thickets", Presented at the 2013 Guam Coral Reef Symposium, June 24, 2013, Hyatt Regency Guam
- Provided guest lecture "Introduction to GIS, GPS, and Remote Sensing" for 2013 National Partnerships in Environmental Technology Education Indigenous Fellows Institute, June 3-7, 2013, Guam Community College
- Assisted with planning and implantation of the Coral Health Impacts Workshop attended by participants from throughout Micronesia and Southeast Asia; presented lecture on scleractinian coral identification and an overview of Guam's long-term coral reef monitoring program, January 14-18, 2013, University of Guam Marine Lab
- "Stormwater impacts to Guam's aquatic resources: Why we need to protect streams, wetlands, and reefs", Co-presented with Valerie Brown, NOAA Pacific Islands Regional Office, at the 2011 Guam Stormwater Workshop, July 27-29, 2011, Sheraton Laguna Resort, Guam
- Presented the "Monitoring Coral Bleaching" and "Monitoring for Resilience" modules of the NOAA Reef Resilience and Climate Change Workshop, August 17-20, 2009, Guam Hilton Hotel

- "Top-down experimental manipulation of Bahamian patch reef communities: Macroalgal removal and Diadema antillarum additions." Poster presented at the 11<sup>th</sup> International Coral Reef Symposium, July 7-11, 2008, Ft. Lauderdale, Florida
- "Coastal mapping products." Presented at the 3<sup>rd</sup> Regional Conference of the Pacific Association of Land Professionals, March 17-20, 2008.
- "The Guam Coastal Atlas": Creating benthic habitat data and a printed, CD-ROM, and web-based atlas with limited resources." Presented at the Pacific Island Countries GIS/Remote Sensing Conference, Suva, Fiji, Nov. 27-30, 2006
- "The Guam Coastal Atlas: Providing benthic habitat data and other coastal information for the nearshore waters of Guam." Presented at the PacGeo Conference, Honolulu, HI, Oct. 3-5, 2006
- "NOAA's Pacific Islands Assistantship at work on Guam: Building local spatial technology capacity and providing support for coastal mapping projects." Presented at the Coastal GeoTools '05 Conference, Myrtle Beach, South Carolina, Mar. 7-10, 2005
- "NOAA's Pacific Islands Assistantship at work on Guam: Spatial technology support and local capacity building for Guam's coastal management community." Presented at the Coastal Zone '05 Conference, New Orleans, Louisiana, July 18-21, 2005
- "U.S. NOAA Pacific Islands Assistantship Program: Current projects on Guam." Poster presented at the Coastal Zone Asia Pacific Conference, Brisbane, Australia, Sept. 5-9, 2004
- "NOAA Pacific Islands Assistantship Guam." Presented at the All-Islands Coastal Zone Management Conference, Saipan, CNMI, June 21-23, 2004

#### OTHER CONFERENCES/WORKSHOPS ATTENDED

- 3<sup>rd</sup> Micronesia Challenge Measures Working Group Meeting, Feb. 6-11, 2012, Koror, Palau
- 2010 Pacific Island Committee Meeting, Chuuk, *March* 8-12, 2010
- 2<sup>nd</sup> Micronesia Challenge Measures Working Group Meeting, Feb. 15-19, 2010, Koror, Palau
- "Getting Maps and Forestry Inventory Assessment Data in the Hands of the Users Workshop/State-wide Assessment and Resource Strategy Kickoff," sponsored by the U.S. Forest Service, *April 27 May 1, 2009, Koror, Palau*
- Hawai'i Geospatial Modeling and Analysis Workshop, sponsored by the U.S. Forest Service, *Aug.10-14*, 2009, *Honolulu*, *Hawai'i*
- NOAA Pacific Coral Reef Ecosystem Integrated Observation System Workshop, *Nov.18-20, 2008, Honolulu, Hawai'i*
- "Moving toward measuring our effectiveness: The 1<sup>st</sup> meeting of the Micronesia Challenge Measures Working Group," *June 2-6, 2008, Pohnpei, Federated States of Micronesia*
- ESRI International GIS Users Conference, Aug. 9-13, 2006, San Diego, California
- ESRI International GIS Users Conference, Aug. 9-13, 2004, San Diego, California
- Pacific Islands Environmental Conference, June 23-25, 2004, Saipan, CNMI
- 10<sup>th</sup> International Coral Reef Symposium, *June 28-July 2, 2004, Okinawa, Japan*

## SOFTWARE/COMPUTER LANGUAGE PROFICIENCY

- ArcGIS versions 8.x, 9.x, and 10.x; Spatial Analyst and 3D Analyst Extensions
- Trimble Terrasync and GPS Pathfinder Office
- PRIMER/PERMANOVA, SigmaPlot, R, and NCSS statistical software
- Adobe Photoshop CS5, Dreamweaver CS3, InDesign CS5, and Fireworks CS3
- Proficient in HTML code, basic website development
- Microsoft Word, Excel, and Powerpoint

#### GRANTS AND SCHOLARSHIP RECOGNITION

- Seaspace Scholarship, 2002-03, Seaspace, Inc.
- Exploration Fund Grant, 2002, Explorer's Club
- Faculty-Student Research Collaboration Grant, 2001, Masters of Environmental Studies Program, The

- Graduate School at the College of Charleston
- Barbara Lindstedt Trust Award, 2001-02, Masters of Environmental Studies Program, The Graduate School at the College of Charleston
- Second National Bank of Warren Scholarship, 1998-99
- Omicron Delta Kappa National Leadership Society, 1997-99
- Hiram College Endowed Scholarship, 1997-99
- Hiram College Garfield Scholarship, 1995-99
- Ohio Academic Scholarship, 1995-99

## SELECTED PRO BONO PROJECT DEVELOPMENT AND VOLUNTEER ACTIVITIES

- Guide for Wilderness Travel Coral Spawning Expedition, 2011
- Developed, maintains, and updates guamreeflife website (http://www.guamreeflife.com)
- International Coastal Cleanup Site Co-Leader, 2008 and 2009
- International Coastal Cleanup Participant, *multiple years*
- Recycling volunteer at Liberation Day parade and festival, *multiple years*
- Participated in other coastal and roadway cleanup efforts, multiple years
- Provided safety support as Divemaster for George Washington High School students during snorkeling events at Ypao Beach, *multiple events*
- Fish Bowl high school trivia competition moderator, *multiple years*
- Participated in outreach efforts at Island Pride Festival and other events, multiple years
- Participated in Career Day at George Washington High school, multiple years
- Guide for "Splashing in the Sea" youth snorkeling event, *multiple years*

## **REFERENCES**

## Laurie Raymundo, Ph.D.

Associate Professor of Marine Biology University of Guam Marine Laboratory

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## Terry Donaldson, Ph.D.

Associate Professor of Marine Biology University of Guam Marine Laboratory

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## **Evangeline Lujan**

Former supervisor and Administrator, Guam Coastal Management Program

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Phone: (671)-489-4417 E-Mail: christianpaulbenitez@gmail.com

Education

Simon A. Sanchez High School *High School Diploma* 

June 2009

University of Guam

Bachelor of Business Administration, Concentration in Entrepreneurship

May 2014

Professional Experience

Planner I Bureau of Statistics and Plans Socio-Economic Planning Program Government of Guam October 20, 2014 to Current

## CORAL REEF CONSERVATION GRANT PROGRAM and CORAL REEF INITIATIVE MANAGEMENT GRANT

- Assist the Chief Planner and Coral Reef Initiative Coordinator in the implementation and administration of the Coral Reef Conservation Grant program and the Coral Reef Initiative Management Grant to include the preparation of correspondence, preparation of Memorandum of Understanding, preparation of progress reports, preparation of request for proposals, preparation of request for price quotations, maintenance of grant files, implementation of the public and outreach component of the grant with initial guidance from the Supervisor.
- Assist the Chief Planner in reviewing request for reprogramming request and preparing the reprogramming requests to include the memorandum for the Chief Planner review and Director signature, the revised budget and the work request. Ensure the request is consistent with the project proposal.
- Email subgrantee programmatic point of contact and financial point of contact to remind entity about the submission of the reports 30 or 25 days before the progress report and financial reports are due, and send another reminder notice 10 days before the progress report and financial reports are due.
- Assist the Chief Planner and Coral Reef Initiative Coordinator sent out follow up memorandum
  and or email correspondence to subgrantee that have not submitted their report three days after
  the report due date.
- Maintain a CRCP and CRI log sheet to track the submission of progress reports, financial reports, close out report, and property inventory report.
- Maintain programmatic files in grant files 30 days after the supervisor reviews documents.
- Reserve the conference room for the meeting, send a reminder call a day before the meeting to ensure reservation is set, assist in sending reminder calls and or emails three days to invited participants before the meeting, ensure multi-media, visual aid screen, laptop, white board and flip chart are set up prior to meeting, ensure a sign for the meeting and in-sheet sheet is available, and meeting documents produced.

- Obtain the three price quotation for the annual Guardian of the Reef Training beginning in October to ensure the training is scheduled for the start of Guardian of the Reef Training.
- Obtain three price quotations for the bus transportation for the Guardian of the Reef presentation and the Guam Nature Alliance activities; and coordinate the bus schedule one or two weeks from the date the buses will be needed to include the DPW bus schedule if the private busing will not available.
- Coordinate the Guardian of the Reef presentation schedule at the elementary schools and the bus transportation schedule.
- Assist the Chief Planner in the coordination of the Pig Hunting Derby and the Pork in the Park outreach to include attending the planning meetings, map out the logistics for the Pork in the Park, obtain price quotations for the outreach supplies, man the check in site, and provide logistics and set up support for the Pork in the Park.

#### **GUAM STATE CLEARINGHOUSE**

- Thoroughly assess criminal justice federal grant in aid applications and State Plans, amendments and other federal commitments to ensure consistency with territorial policies, goals, and objectives; adherence with applicable federal and local statutes, guidelines, and regulations pertaining to the grant.
- Conduct research and analysis, and collect data, if necessary, in order to evaluate program
  effectiveness in addressing a territorial need; impact upon the territory's socio-economic
  development; weakness or problems that may arise through program implementation.
- Consult and alert applicant agencies with findings or anticipated problems, making all attempts to assist in resolving the problem through recommended adjustments, development and improvement in program implementation.
- Prepare written comments and make recommendations on whether the application should be approved, disapproved or conditionally approved by the Guam State Clearinghouse by the due date.

#### PAUL COVERDELL FORENSIC SCIENCE IMPROVEMENT GRANT PROGRAM

- Assist the Socio Economic Planning Program Supervisor in the preparation and administration of the Paul Coverdell Grant Program to include the preparation of grant award application, preparation of award acceptance and certifications, address special award conditions and prepare the necessary correspondence to obtain information on how to meet compliance with special award conditions, preparation of subgrantee administrative manual, ensure updates are made to subgrantee administrative manual, preparation of correspondences, preparation of Memorandum of Understanding, preparation of progress reports, preparation of request for proposals, preparation of correspondences for Grantor approval for budget modifications, change of project scope, change of project period, contact information and others, preparation of correspondence regarding reprogram and other requests and supporting documents to subgantees, and maintenance of grant files with initial guidance from the Supervisor such as Work Requests, Grant Adjustment Notices, Certification, Progress and Financial Reports, and Correspondences
- Contact Coverdell programmatic point of contact and financial point of contact to remind entity about the submission of the reports 10 days before the quarter progress report and quarter financial report are due.
- Within 90 days of program desired completion date, coordinate with the BSP Administrative Staff to work with the sub recipients financial point of contact to ensure the following: available funds are encumbered and obligated (Issued Purchase Order), invoices paid, outstanding requisitions are de obligated with DOA, outstanding purchase orders are de obligated with GSA,

- and journal voucher of negative balances are addressed; and to ensure the Bureau administrative funds are encumbered and or deobligated.
- Ensure successful Grant Close-Out Process with compliance with Progress Reporting Requirements, Financial Status Reporting Requirements, Special Condition Compliance, Financial Reconciliation Requirements and Programmatic Requirements Certification.
- Send out follow up memorandum and or email correspondence to subgrantee that has not submitted their report five days after the report due date.
- Ensure Semi-Annual Progress Reports via on-line reporting process is completed before the prescribe grant requirement deadline.
- Maintain a Coverdell log sheet to track the submission of quarter progress reports, quarter financial reports, close out report, and property inventory report that is updated.
- Maintain good work relations with program point of contact and financial point of contact regarding grant program to include Grant Policy Advisor.
- Assist the Socio Economic Planning Program Supervisor in conducting on-site programmatic and evaluative monitoring to ensure compliance with Federal and State laws and regulations and to determine if the subgrant is achieving its overall objectives and having some positive impact on the problem that the application is addressing through funding of this subgrant. Preparation of correspondence regarding on-site monitoring to subgrantee; conduct pre-desk top review using the prescribed BJA Monitoring Tool with grant files; preparation of correspondence regarding the findings and recommendations of the on-site monitoring; conduct follow-up with subgrantee on corrective action plan; preparation of final correspondence once subgrantee has met all programmatic and financial grant requirements to complete the on-site monitoring.
- Maintain programmatic files in grant files.
- Assist in other related duties as required by the Socio Economic Planning Program Supervisor.

## RESIDENTIAL SUBSTANCE ABUSE TREATMENT (RSAT) GRANT PROGRAM

- Assist the Socio Economic Planning Program Supervisor in the preparation and administration of the Residential Substance Abuse Treatment (RSAT) Grant Program to include the preparation of grant award application, preparation of award acceptance and certifications, address special award conditions and prepare the necessary correspondence to obtain information on how to meet compliance with special award conditions, preparation of subgrantee administrative manual, ensure updates are made to subgrantee administrative manual, preparation of correspondences, preparation of Memorandum of Understanding, preparation of progress reports, preparation of request for proposals, preparation of correspondences for Grantor approval for budget modifications, change of project scope, change of project period, contact information and others, preparation of correspondence regarding reprogram and other requests and supporting documents to subgantees, and maintenance of grant files with initial guidance from the Supervisor such as Work Requests, Grant Adjustment Notices, Certification, Progress and Financial Reports, and Correspondences
- Contact RSAT programmatic point of contact and financial point of contact to remind entity about the submission of the reports 10 days before the quarter progress report and quarter financial report are due.
- Within 90 days of program desired completion date, coordinate with the BSP Administrative Staff to work with the sub recipients financial point of contact to ensure the following: available funds are encumbered and obligated (Issued Purchase Order), invoices paid, outstanding requisitions are de obligated with DOA, outstanding purchase orders are de obligated with GSA, and journal voucher of negative balances are addressed; and to ensure the Bureau administrative funds are encumbered and or deobligated.

- Ensure successful Grant Close-Out Process with compliance with Progress Reporting Requirements, Financial Status Reporting Requirements, Special Condition Compliance, Financial Reconciliation Requirements and Programmatic Requirements Certification.
- Maintain good work relations with program point of contact and financial point of contact regarding grant program to include Grant Policy Advisor.
- Send out follow up memorandum and or email correspondence to subgrantee that has not submitted their report five days after the report due date.
- Ensure Quarter Performance Measurement Tool (PMT) and Semi-Annual Progress Reports via the on-line reporting process is completed before the prescribe grant requirement deadline.
- Maintain a Coverdell log sheet to track the submission of quarter progress reports, quarter financial reports, close out report, and property inventory report that is updated.
- Assist the Socio Economic Planning Program Supervisor in conducting on-site programmatic and evaluative monitoring to ensure compliance with Federal and State laws and regulations and to determine if the subgrant is achieving its overall objectives and having some positive impact on the problem that the application is addressing through funding of this subgrant. Preparation of correspondence regarding on-site monitoring to subgrantee; conduct pre-desk top review using the prescribed BJA Monitoring Tool with grant files; preparation of correspondence regarding the findings and recommendations of the on-site monitoring; conduct follow-up with subgrantee on corrective action plan; preparation of final correspondence once subgrantee has met all programmatic and financial grant requirements to complete the on-site monitoring.
- Maintain programmatic files in grant files.
- Assist in other related duties as required by the Socio Economic Planning Program Supervisor.

#### COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY

- Assist the Socio Economic Planning Program Supervisor in the preparation and submission of Guam's CEDS Update to the U.S. Economic Development Administration in collaboration with GEDA, and the CEDS committee in the preparation of the CEDS meetings and preparation of correspondence.
- Reserve the conference room for the meeting, send a reminder call a day before the meeting to ensure reservation is set, assist in sending reminder calls and or emails three days to invited participants before the meeting, ensure multi-media, visual aid screen, laptop, white board and flip chart are set up prior to meeting, ensure a sign for the meeting and in-sheet is available, and meeting documents produced.
- Assist in other related duties as required by the Socio Economic Planning Program Supervisor.

#### **IMAGINE GUAM 2065**

- Assist the Socio Economic Planning Program Supervisor in Secretariat responsibilities for the Social Stabilization and Guam Modernization Committees to include preparation of correspondences, coordination of meetings, and assist in sending reminder calls and or emails three days to committee members three days before the meeting, participation in meetings, and note taking of minutes.
- Assist in other related duties as required by the Socio Economic Planning Program Supervisor.

### Grants.Gov password update and Systems for Awards Management annual renewal

- Update passwords for grants.gov quarterly for DUNS 778904292 and 855031506.
- Renew the SAM annual update (If any changes to the Director, need to update the DUNS number with DUNS and Bradstreet Australia via email. Documentation can be found in the binder to update the information).

#### **Bureau of Statistics and Plans Website**

 Maintain and update the Socio Economic Planning Program and Coral Reef Initiative program site. Coordinate and collaborate with the Socio Economic Planning Program staff and Coral Staff on posting and updating the information on the web.

#### Watabe Weddings – *Internship*

Fall 2013

- Learned operations of the wedding business on Guam.
- Learned the job of a party coordinator, from preparing to hosting parties, and serving guests.
- Learned to work with party operations staff team, as well as coordinate with other departments.
- Finished internship requirements and offered a part time job as party coordinator.

## Special Project, with UOG Cooperative Extension Service

Aug. - Dec. 2013

- Developed a survey to determine farm gate prices of local produce
- Practiced and developed phone etiquette from conducting phone surveys with hundreds of local farmers
- Surveyed local vegetable stands and grocery stores for local produce prices on site
- Collected and organized data received through surveys

#### Party Coordinator, at Watabe Weddings

Nov. 2013 - Mar. 2014

- Oversaw planning and coordinating wedding parties.
- Served foreign customers from Japan, Taiwan, and China
- Prepared paper work required for parties and wrote reports to keep records of events for each party.

#### **Business Plan Development**

Jan-May 2014

- Assisted to create an innovative product utilizing the Blue Ocean Strategy used to develop a business plan for a new local brand of apparel for Guam
- Conducted a market analysis based on the relative industry of the business
- Organized the operational procedures and production methods for the business
- Conducted a 5 year financial projection for the business
- Presented our business plan at the 2014 American Marketing Association's Marketing Conference

#### Skills

- Proficient in Microsoft Office 2007: Word, Excel, PowerPoint, and Publisher.
- Ability to work with both Mac and PC operating systems and various computer applications such as Microsoft Office Applications, Adobe Creative Suite Applications, etc.
- Knowledgeable in AS400 Financial Management System to view accounts balances, encumbrances, payments, purchase orders, etc.
- Knowledgeable in operating a Velobind Machine, Spiral Binding Machine, 10 Key punch calculator, facsimile machine, scanner, telephone systems, laser printers and other related office systems.
- Knowledgeable in setting up a multi media project with laptop.
- Capable of working effectively with the public and employees.
- Excellent skills in communicating effectively, orally and in writing.
- Capable of making work decisions in accordance with appropriate program guidelines.
- Capable of maintaining records and preparing reports by the due dates.
- Interpersonal skills, Good communication skills, and meets project deadlines.
- Graphic Designing
- Webpage Designing
- Digital Photography and Videography

## Lola E. Leon Guerrero P.O. Box 114 Hagatna, Guam 96932 Email: pldje@teleguam.net

Contact Number: (671) 472-1421 (h) • (671)486-2646

#### **EDUCATION**

Bachelor of Business Administration in Finance and Economics, August 25, 1986 - May 1990 University of Guam

Major courses completed: Principles of Accounting I & II, Money & Banking, Corporate Finance, Basic Business Finance, Business Law, Financial Institution Management, Budgeting, Investments, Business Policy, Principles of Economic I & II, Basic Quantitative, Economics Geography, Introductory Statistics, and Applied Statistics

#### **WORK EXPERIENCE**

Chief Planner
Bureau of Statistics and Plans
Government of Guam

July 25, 2016 to Current PO Box 2950 Hagatna, Guam 96932

- Directs all Planning Information Program and Socio-Economic Planning Program and Guam Coastal Management Program functions with the Bureau. Also provides direct oversight over Department of Justice, NOAA Commerce and DOI and other federal grants and maintains familiarity with all grant requirements and to ensure that the Bureau complies with federal grant management rules and regulations specific to each grant administered inclusive of the Super Circular Rules; ensure grants comply with federal and local requirements; ensures federal grants and grants reports are submitted on time to federal funding agency; ensure sub grantees are monitored; works with department heads in addressing their requirements while ensure federal requirements are met. Prepares applications for submission to federal funding agencies, prepares extension requires, and prepares Scope of Work and Memorandum of Understanding as required.
- Oversees the Bureau's operational effectiveness which includes: (a) development of performance based budget; (b) development of annual General Fund budget request; (c) ensures allotment release schedules are appropriate; (c) certifies fund availability for all financial documents; (e) signs electronic federal grant documents on behalf of the Director; (f) reviews all documents prior to submission to Director for signature to ensure they are complete and consistent with agency and Guam policies; (g) signs documents on behalf of the Director (this function varies from Director to Director); and (h) serves as Acting Director in the Director's absence (this function varies by Governor and by Director).
- Establishes criteria for the preparation of impact studies and statements; ensure studies and statements are supported by analytical and descriptive data; ensures recommendations are well thought out; ensures recommendations are based on a balanced assessment of positive and negative outcomes.
- Represent the Bureau at conferences and meetings with local government officials, public and private agencies, and representatives; convey Guam's policies and participate in formulation of Guam's policies.
- Conducts, analyzes, and writes comprehensive strategic plans, specialized studies and grant applications. Identifies appropriate descriptive and analytical data, analyzes data, formulate document components, and formulates recommendations, policy positions, and budgets.
- Oversee adoption process of elements to Guam's comprehensive development plan.
- Provides technical support to the Governor's Civilian Military Task Force and other task forces and committees in order that they can identify and meet the challenges of military growth. Prepares or causes to be prepared specialized studies assessing the impact of military growth on the island's economic, social and cultural sectors. Maintains familiarity with all issues related to the relocation of the Marines and military expansion, including actions and reactions in Guam, Japan, the US Congress, DoD, and national and local medias.

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Planner IV
Bureau of Statistics and Plan
Socio-Economic Planning Program
Government of Guam

March 24, 2013 to July 22, 2017 P.O. Box 2950 Hagatna, Guam 96932

- Provide direct oversight over the Socio Economic Planning Program.
- Provide direct oversight over the planning, development, coordination and implementation of the U.S. Department of Justice grants, DOI, and NOAA grants.
- Provide direct oversight in the development, implementation, planning support and technical assistance in the areas of criminal justice planning, economic development planning, fisheries development planning, evaluation of federal grants for intergovernmental review to ensure plans and updates to plans are prepared and submitted to the requesting agency.
- Provide direct oversight in coordinating the review of Guam's participation and involvement in national and regional organization to ensure Guam participates by providing its input into national and regional policies.
- Applies for and administers the Edward Byrne Justice Assistance Grant Program.
- Applies for and administers the Paul Coverdell Forensic Science Improvement Grant Program.
- Coordinate and prepare Guam's Multi Year Strategy for Drug Control, Violent Crime and Criminal Justice System Improvement.

Interim Administrator
Bureau of Statistics and Plan
Guam Coastal Management Program
Government of Guam

December 16, 2013 to July 8, 2014 P.O. Box 2950 Hagatna, Guam 96932

#### **Coastal Management Program Supervisor:**

- Supervise the day to day operations of the Guam Coastal Management Program and the Land Use Planning Program (LUPP) in the following:
  - by providing direct oversight in the administration of all activities of the Guam Coastal Management Program to include administering the Coral Reef Conservation Program Cooperative Agreement, the Department of Interior Coral Reef Initiative Management Grant Program, the U.S. Geology Survey, and the Coastal Zone Management Act in the network coordination, development, policy and legislative efforts, federal consistency, master planning efforts, public outreach and education, and Section 309 implementation.
  - by directing all Guam Coastal Management Program staff in the application of GCMP local and federal policy, law and rules and regulation in review and recommendation on development application and federal consistency by reviewing final products for completeness, professionalism, timeliness and accuracy.
  - by directing all GCMP staff, Land Use Planning staff, and Coral Reef staff in the implementation of the Coastal Zone Management Act and Coral Reef Conservation Program Cooperative Agreement tasks.
- Monitors staff progress on assigned tasks and provides direction on improving product deliverables. Conducts mid performance employee performance evaluation with subordinate staff and provides recommendation to the Director. Counsels subordinate staff on personnel problems and work related issues as necessary.
- Provides recommendations and directs input to the Director in the formulation and development of plans, policies, and studies that further the Guam Coastal Management Program.

#### **Coastal Zone Management Act**

• Oversee the Grant Administration of the Coastal Zone Management Act in the development of

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the application and implementation of the tasks identified in the grant.

- Administer the programs projects and activities of the Guam Coastal Management Program to include Networking, Development, Policy, and Legislative Efforts, Master Planning Efforts, Federal Consistency Efforts, Public Outreach and Education, and Section 309.
- Oversee the review and analysis of land use, federal consistency, and coastal planning projects to ensure compliance with applicable federal and local requirements and guidelines.
- Review draft Application Review Committee correspondence prepared by Senior Planners comments to ensure consistency with the local and federal requirements for the Director signature.
- Review and prepare grant reprogramming requests and revised scope of work for the Director signature for formal submission on the NOAA grants online system.

#### **Coral Reef Conservation Program Cooperative Agreement**

- Oversee the Grant Administration of the Coral Reef Conservation Program Cooperative Agreement, the development of the application and implementation of the projects funded.
- Review and prepare grant reprogramming requests and scope of works for projects and personnel for the Director signature for formal submission on the NOAA grants online system.

#### **Coral Reef Initiative Management Grant**

- Oversee the Grant Administration of the Coral Reef Conservation Program Cooperative Agreement the development of the application and implementation of the projects funded.
- Review and prepare grant reprogramming requests for the Director signature for formal submission on the grants management system.

#### **Land Use Planning Program**

 Oversee the development of mapping tools and products to assist BSP's planners and other government entities in reviewing and planning for the wide range of land use, socio-economic, and environmental issues it is tasked.

Planner IV - Acting Detail Bureau of Statistics and Plan Socio-Economic Planning Program Government of Guam

October 24, 2011 to March 23, 2013 P.O. Box 2950 Hagatna, Guam 96932

- Provide direct oversight over the Socio Economic Planning Program.
- Provide direct oversight over the planning, development, coordination and implementation of the U.S. Department of Justice grants, DOI, and NOAA grants.
- Provide direct oversight in the development, implementation, planning support and technical assistance in the areas of criminal justice planning, economic development planning, fisheries development planning, evaluation of federal grants for intergovernmental review to ensure plans and updates to plans are prepared and submitted to the requesting agency.
- Provide direct oversight in coordinating the review of Guam's participation and involvement in national and regional organization to ensure Guam participates by providing its input into national and regional policies.
- Applies for and administers the Edward Byrne Justice Assistance Grant Program.
- Applies for and administers the Paul Coverdell Forensic Science Improvement Grant Program.
- Coordinate and prepare Guam's Multi Year Strategy for Drug Control, Violent Crime and Criminal Justice System Improvement.

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Planner III
Bureau of Statistics and Plan
Socio-Economic Planning Program
Government of Guam

January 30, 1999 to October 23, 2011 P.O. Box 2950 Hagatna, Guam 96932

- Applies for and administers the Edward Byrne Justice Assistance Grant Program.
- Applies for and administers the Paul Coverdell Forensic Science Improvement Grant Program.
- Coordinate and prepare Guam's Multi Year Strategy for Drug Control, Violent Crime and Criminal Justice System Improvement.
- Prepare and submits Guam's Annual Evaluation Report to the Bureau of Justice Assistance
  describing the program activities, performance metrics, and evaluation findings of Byrne funded
  projects, and how the Byrne funds have impacted Guam's criminal justice agencies by reviewing and
  evaluating all sub grantees annual performance narrative reports by the due date.
- Conduct annual programmatic evaluations of the JAG and Coverdell sub grantees to monitor the
  quality of the programmatic activities and financial expenditures to determine if the project is
  progressing and is achieving its intended results; to identify and disseminate information about
  projects of proven effectiveness so that this project can be replicated locally or nationally.
- Oversee the planning, development and implementation of Guam's Sex Offender Registry by
  providing technical assistance to the Sex Offender Registry Committee in developing and reviewing
  Guam's proposed registry statute to ensure that is in compliance with the federal mandates so Guam
  does not lose federal funds.
- Lead the development of the Guam's Sex Offender Registry Standard Operating Procedures to
  ensure the responsible agencies involved in carrying out the legislation comprehend their
  responsibilities and implement the legislation. Drafted the SOP based on the legislation, then
  facilitated meetings to bring the responsible agencies together to review the draft SOP in order to
  finalize the document.
- Assist in the amendments to the language in Public Law 28-77 to strengthen Guam's sex offender registration and notification program requirements; and to ensure the language mirror the procedures developed and in place.
- Coordinate and ensure that Guam's Sex Offender Registry Plan under the National Sex Offender Registry Program (NSOR) which is administered by the Superior Court of Guam is consistent with Guam's goals of establishing and developing a Sex Offender and Notification Registry System; and to interface with the FBI's NCIC 2000.
- Collect, organize, analyze and prepare materials in response to reports, plans and projects related to criminal justice issues by the due date.
- Establish, consult and maintain contacts with appropriate representatives from Government of Guam's criminal justice agencies, federal local law enforcement officials, legislature, U.S. Department of Justice officials, and states receiving funds from the Edward Byrne Justice Assistance Grant Program in order to identify and stay abreast of criminal justice issues that may have a potential importance to the Island; and to collect descriptive and analytical data, as well as staying abreast of developments and changes in the federal laws, regulations and congressional bills that will impact the Byrne JAG Fund.
- Request for Proposals: Conduct evaluation and rating of Request for Proposals for the Department of Mental Health and Substance Abuse, the Department of Corrections, and the Customs and Quarantine Agency.
- Plan and supervise the development and formulation of the Bureau of Statistics and Plans Performance Based Budget and Strategic Plan for submission to the Bureau of Budget and Management Research by the due date.
- Collaborate with each Division within the Bureau to define the task and activities within each Division to create the Percentage, Hours, Task and Activities Table to formulate the PBB spreadsheet template using Excel.
- Oversee the preparation of the Bureau of Statistics and Plans Strategic Performance Based Budget for Fiscal Year 2009 and Fiscal Year 2010 for submission to the BBMR by the due date.

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#### **Technical Reviews:**

 Guam State Clearinghouse Review - Thoroughly assess criminal justice federal grant in aid applications and State Plans, amendments and other federal commitments to ensure consistency with territorial policies, goals, and objectives; adherence with applicable federal and local statutes, guidelines, and regulations pertaining to the grant.

Conduct research and analysis, and collect data, if necessary, in order to evaluate program effectiveness in addressing a territorial need; impact upon the territory's socio-economic development; weakness or problems that may arise through program implementation.

Consult and alert applicant agencies with findings or anticipated problems, making all attempts to assist in resolving the problem through recommended adjustments, development and improvement in program implementation.

Prepare written comments and make recommendations on whether the application should be approved, disapproved or conditionally approved by the Guam State Clearinghouse by the due date.

- Proposed Legislation Review Review proposed criminal justice related local legislation that impacts
  the Bureau's areas of responsibility. Determine positive and negative impacts upon the Territory's
  present and future development. Prepare, as required, written comments, recommendations or
  testimony for the Director with concern for clarity, conciseness and consistency.
- Assisted the Judiciary of Guam in the development and review of the 2007 Comprehensive Approach
  to Sex Offender Registry (CASOM), 2008 Guam Sex Offender SMART Program, and 2011 Adam
  Walsh Act Implementation Grant. These are discretionary funds and the Judiciary of Guam
  application was approved.

Planner I
Bureau of Planning
Socio-Economic Planning Program
Government of Guam

July 29, 1991 to January 29, 1999 P.O. Box 2950 Hagatna, Guam 96932

- Assist the Senior Planner in the preparation, coordination and appraisal of a wide range of plans, policies and studies that further Guam's economic, social and infrastructure goals, priorities and planning activities, more specifically, in the areas of Criminal Justice Planning.
- Assists the Senior Planner in the distribution, collection and analysis of data for a wide range of plans, policies and studies that further Guam's economic, social and infrastructure goals, priorities and planning activities, more specifically, in the areas of Criminal Justice Planning.
- Prepare charts, graphs, and tables to best portray the data for Criminal Justice Statewide Strategic Plan
- Assists the Senior Planner in the implementation of various phases of criminal justice planning research and statistical activities in the collection, organization and analysis of data; and correlates results with applicable specification.
- Assists the Senior Planner in the administering of federal grant funds including establishing funding
  priorities, distribute funds, prepare MOUs monitor sub recipient compliance with federal grant special
  conditions and provisions, and provide ongoing assistance to sub recipients specific to the Byrne
  JAG.
- Assists the Senior Planner in ensuring that the Byrne JAG subgrantees are aware of and in compliance with all programmatic and financial rules through the usage of special conditions and subgrantee monitoring of federal grant funds through desk review, on site, and program assessment of grants.

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• Assists the Senior Planner in the development of the Government of Guam Feasibility Office Space Study by determining descriptive and analytical data requirements and determine data sources required for adequate planning organization, and interpretation. Develop the survey instrument to be used to gather the data from the government agencies leasing office space. Distribute and collect the survey instrument received by the government agencies leasing office space. Follow up the agencies on incomplete forms submitted. Establish and maintain contact with Government of Guam line and autonomous agencies in order to identify and stay abreast of current office space information; and to collect descriptive and analytical data. Identify and analyze charts, tables, and graph that are required to best portray the data and information collected from the survey. Prepare a written assessment of the Executive Branches utilization of office space. Develop and prepare the Feasibility Office Space Studies by the due date.

#### **CONTINUING EDUCATION COURSES**

USDA Graduate School Certificate for Successful Completion of Performance Measurement and Budgeting, October 10 – 17, 2007, 24 Hrs CPE

USDA Graduate School Certificate for Successful Completion of Strategic Planning for Government Organizations, February 25 – 28, 2008, 16 Hrs CPE

USDA Graduate School Certificate for Successful Completion of Performance Based Management System, March 2012, 32 Hrs CPE

U.S. Department of Justice Certificate for Successful Completion of DOJ Grants Financial Management, March 23, 2012, 8 Hrs CPE

USDA Graduate School Certificate for Successful Completion of Grant Management Supercircular Overview, January 12-16, 2015, 24 Hrs CPE

#### **CERTIFICATES**

- US Department of Justice, Bureau of Justice Assistance, Grant Administration Training and Technical Assistance Certificate of Training
- Justice Research and Statistics Association, National Computer Center Certificate for Successful Completion of Computer Graphics for Reports and Presentation Training, April 28, 1992
- US Department of Justice, Office of Justice Programs Certificate for Successful Completion of Financial Management Training Seminar, July 12, 2011
- US Department of Justice, Bureau of Justice Assistance, Project Development and Implementation Training Certificate for Successful Completion of Project Development and Implementation, September 23 - 24, 2002
- US Department of Justice, Bureau of Justice Assistance, Project Development and Implementation Training Certificate for Successful Completion of Project Development and Implementation, February 23 - 24, 2004
- US Department of Justice, Bureau of Justice Assistance, Certificate of Completion of Programs Administration Track, November 30, 2005
- US Department of Justice, Bureau of Justice Assistance, BJA West Regional Conference, December 4 – 6, 2006
- USDA Graduate School Certificate for Successful Completion of Performance Measurement and Budgeting, October 10 – 17, 2007

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- USDA Graduate School Certificate for Successful Completion of Strategic Planning for Government Organizations, February 25 28, 2008
- US Department of Justice, Office of Justice Programs, Office of the Chief Financial Officer Certificate for Successful Completion of Regional Financial Management Training Seminar, December 9 – 10, 2009
- USDA Graduate School Certificate for Successful Completion of Grant Management Supercircular Overview, January 12-14, 2015

#### **COMMITTEES**

- Criminal Justice Automation Commission member
- Sex Offender Registry Committee member

#### **COMMUNITY AFFILIATIONS**

Kusinan Karidad – Serves meals one a month for the homeless.

## MANUEL Q. CRUZ

P.O Box 2400 Hagatna, Guam 96932 (671) 789-2197 (671) 735-9129

E-mail: <u>mannycruz64@hotmail.com</u> <u>guamddc@teleguam.net</u>

#### CAREER SUMMARY

Organized and motivated, with over 40 years of extensive broad-based experience in teaching, administration, management, and supervision in a variety of private business endeavors, local and federal government assignments, and high school and college institutional settings. Skilled business manager, skilled government executive, successful labor/management contract practitioner and negotiator, and excellent team leader with a strong background and knowledge in strategic planning, performance-based improvement, change management, goals development and implementation, contract negotiation, marketing strategies, and measurable outcomes and results. Independent and self-directed professional, flexible and energetic, able to cultivate strong relationships with individuals from diverse organizational and cultural backgrounds, and collaborate effectively with team members to achieve overall organizational objectives. Broad understanding of smart business practices, collaboration and networking efforts and quality assurance, internal review, systems improvement, federal labor law, and human resources recruitment activities. Demonstrated success in federal grant applications and federal grants management. Excellent interpersonal communications skills. Detail oriented, strong organizational and analytical skills. Excellent listener; able to assess needs, and able to synthesize and articulate information. Proven history of trouble-shooting and solving complex operational problems. Strong advocate for preventive maintenance work.

## ACEDEMIC EDUCATION

FORDHAM UNIVERSITY, NEW YORK, N.Y.

Major: Education

Degree: Master of Science in Education (M.S.)

ST. JOSEPH'S SEMINARY, YONKERS, N.Y.

Major: Philosophy/History Degree: Bachelor of Arts (B.A.)

Major: Theology

Degree: Master of Divinity (M. Div.)

#### **EMPLOYMENT HISTORY**

1. June 2016 to Present (Bureau of Statistics and Plans)

**Deputy Director** 

Responsibilities include the chief executive officer (CEO) of the Bureau, to include oversite of GovGuam planning requirements, land-use reviews, environmental concerns, census information, and consumer statistical activities. Administer and coordinate the U.S. Department of Justice law enforcement grants and the Coastal Zone Management Program grants. Serve as the voting member of the Western Pacific Regional Fishery Management Council as the Governor's Designated State Officer (DSO).

2. 2013 to 2015 (Department of Labor)

Director

Responsibilities include assisting the Governor's Staff Assistant in the administration and management of the Guam Department of Labor. Identify problem areas and formulate solutions. Review effectiveness and efficiency of various Federal manpower programs and project. Initiate development of administrative and personnel policies and procedures for use in the Labor Department. Review all program planning proposals, grant applications, budget submissions, financial reports, and provide suggestions and recommendations to the Staff Assistant.

3. 2011 to 2013 (Department of Agriculture)

**Deputy Director** 

Responsibilities include assisting programs set up by the Law Enforcement Section in the Division of Aquatic and Wildlife Resources of the Department of Agriculture and the Civil Defense Office that provides the members of the Civilian Volunteer Conservation Officer Reserve training in crime prevention and operational techniques and procedures for natural and man-made emergencies.

4. Feb. 2007 to Dec. 2010 (Guam Developmental Disabilities Council)

**Executive Director** 

Responsibilities include the chief executive office (CEO) of the Council. Assist the Council, its committees and subcommittees, in formulating public policy impacting on individuals with developmental disabilities. Prepare recommended policies; assist in the development of the 5-Year State Plan; assist in the preparation of annual budgets, annual performance reports, and timely resolutions for Council review and approval. Assure that the mandates of the Federal Developmental Disabilities Act are addressed and complied with. Collaborate with state agencies and non-profits in term of advocacy, system change, and capacity building. Consult with policy-makers to insure that the interests and needs of individuals with developmental disabilities are considered and met.

5. 2005-2007 (Guam Housing Corporation)

Deputy Director (Housing Manager)

Responsibilities include assisting the Corporation President in the planning, development and management of the affordable housing loan programs. Assist in the day-to-day operation of the Corporation. Responsible for the management of the OREO Program to insure that foreclosed houses are properly disposed of. Collaborate with the USDA Rural Development in making affordable housing available to low-income applicants and Chamorro Land Trust Commission constituents. Oversee the Corporation's rental housing units.

#### 6. 2004 to 2005 (Guam Housing and Urban Renewal Authority)

#### **Deputy Director**

Responsibilities include the day-to-day administration and operation of the federally funded public housing programs (Public Housing Program and Section 8 Voucher Program). Oversee the various HUD housing grans/loans and cooperative agreements. Has direct supervision of the budget and accounting offices. Serve as the Contracting Officer of the Authority.

#### 7. 2003 to 2004 (Bureau of Statistics and Plans)

#### Director

Responsibilities include the chief executive officer (CEO) of the Bureau, to include oversite of GovGuam planning requirements, land-use reviews, environmental concerns, census information, and consumer statistical activities. Administer and coordinate the U.S. Department of Justice law enforcement grants and the Coastal Zone Management Program grants. Serve as the voting member of the Western Pacific Regional Fishery Management Council as the Governor's Designated State Officer (DSO).

#### 8. 1986-2003 (American Federation of Government Employees, Local 1689)

#### **Union President**

Responsibilities include the chief executive officer (CEO) of Guam's local federal union with over 5,000 bargaining unit members in the local Navy and Air Force military bases, as well as other Department of Defense (DOD) installations and activities. Responsible for handling employee grievances, disciplinary actions, discrimination complaints, unfair labor practices, etc. Represent the union in major management events and ceremonies. Serve as the chief negotiator in various contract negotiations and contract renewals. Serve as a major resource person during the outsourcing of the Navy bases and the implementation of the BRACC in 1995 through 2000. Serve as the Fair Practices Coordinator for the AFGE District 11 that include locals in 7 states in the Northwest U.S. and previously as the fair Practices Coordinator of the former AFGE District 15 that included all overseas locals in Europe and Asia, as well the locals in the Caribbean and in the Pacific.

#### 9. 1963 to 1986 (OICC/Navy Public Works Center, Guam)

#### Program Manager (GS-12)

Responsibilities include the administration and management of the Navy's Capital Improvement Program (CIP) for the U.S. Trust Territory of the Pacific Islands. Responsible for monitoring the various CIP projects as they were completed and closed-out. Assist in the preparation of the completion reports to the U.S. Department of the Interior. Perform

site visits and field inspections as part of the Navy's inspection team. Serve as the internal quality assurance officer for all local Navy construction projects.

#### 10. 1983 (U.S. Navy Ship Repair Facility, Guam)

Management Analyst (GS-11)

Responsibilities include overall command internal review and internal audit. Conduct cost benefit studies and investigate financial discrepancies and inefficiencies. Identify areas of potential fraud, waste and abuse. Work closely with Navy Audit Service in monitoring and correcting troublesome and unsatisfactory conditions in the shipyard.

#### 11. 1981 to 1983 (Agency for Human Resources Development, GovGuam)

#### Director

Responsibilities include the administration and management of the local federal-funded CETA Program. Oversee and direct the planning, implementation, and operation of the \$2 million CETA Program for the Government of Guam. Direct the recruitment and placement of hundreds of participants and trainees in training programs and hands-on jobs. Work closely with the Regional Administrator, USDOL, in resolving program discrepancies and deficiencies. Assist in the settlement of \$8 million of questioned and disallowed costs that were incurred in previous Administrations.

#### 12. 1979 to 1981 (Office of the Lt. Governor)

#### Special Assistant

Responsibilities include oversight and coordination of all GovGuam federal grant-in-aid programs. Prepare operating budget and staffing needs of the Lt. Governor's office. Oversee the Guam State Clearinghouse for the review and approval of Federal grant applications. Administer the Guam Disaster Assistance Office under FEMA. Oversee the YCC/YACC Programs for the Government of Guam.

#### 10. 1977 to 1978 (U.S. Department of Energy, Washington, D.C.)

Program Analyst (GS-13)

Responsibilities include the development and implementation of the Department of Energy policies for the Pacific Islands and Pacific Territories. Serve as the principal specialist on the relations between the Department and the U.S. territories. Work closely with the Energy-Extension Program for fund allocations and fun extension of the territories.

#### 13. 1975 to 1977 (U.S. Department of the Interior, Office of Territorial Affairs)

Staff Assistant (GS-12/13)

Responsibilities include staff advisor and staff specialist to the Director of Territorial Affairs on various programs and activities relating to territorial and insular affairs of Guam and the other U.S. territories. Represent the office on various committees, task forces, and study groups that were responsible for developing Departmental policies and programs. Prepare official correspondence and point papers of the Director in matters that deal with Guam and the other pacific territories. Review and evaluate territorial proposals, requests,

and grant applications. Serve as information officer and Federal Register coordinator. Serve as the YCC and YACC program coordinator and field representative for the territories.

14. 1974 to 1975 (U.S. Department of the Interior, Office of Territorial Affairs)

**Territorial Intern** 

Responsibilities include appointment and assignment to work at the Office of Territorial Affairs under Feral IPA Mobility Program. Assist the Director in management of affairs dealing with the Guam Government. Assist Guam officials in OMB and Congressional hearings. Review Guam's financial proposals, requests, reports, etc., and provide input.

15. 1973 to 1974 (Government of Guam, Office of the Governor)

Deputy Assistant for Manpower

Responsibilities include assisting the Governor's Staff Assistant in the administration and management of the Guam Department of Labor. Identify problem areas and formulate solutions. Review effectiveness and efficiency of various Federal manpower programs and project. Initiate development of administrative and personnel policies and procedures for use in the Labor Department. Review all program planning proposals, grant applications, budget submissions, financial reports, and provide suggestions and recommendations to the Staff Assistant.

16. 1972 to 1973 (Government of Guam, Department of Education)

**Deputy Director** 

Responsibilities include assisting the Director and the Board of Education in formulating major departmental policies and procedures. Advise the Director on fiscal and administrative matters. Responsible for oversight of all departmental personnel staffing and position management. Administer and coordinate the educational activities of the secondary schools. Coordinate all the interscholastic activities. Responsible for finalizing the annual budget and resource requirements of all the secondary schools. Serve as one of the management representatives in the teacher contract negotiations with the Guam Federation of Teachers (GFT).

17. 1965 to 1970 (Diocese of Agana, Catholic School Office)

Superintendent of Catholic Schools

Responsibilities include assisting the Bishop in formulating major educational policies for all parochial schools in Guam and in Saipan. Provide leadership in improvement of Catholic elementary and secondary education in Guam and in Saipan. Responsible for the formulation and standardization of the diocesan school calendar, grading system and diocesan report cards. Initiate and coordinate textbook selection procedures, school busing, and school lunch program with the Government of Guam.

#### PERSONAL INFORMATION

Married (Spouse: Carmen G. Cruz)

Two Children (Melissa Leona Cruz and Charles John Cruz)

## WILLIAM M. CASTRO

wilcastro671@gmail.com • (671) 929-6209 • P.O. Box 21152, Barrigada, Guam 96921

#### **BIO-SKETCH SUMMARY**

#### SENATOR | EXECUTIVE & SENIOR LEVEL ADMINISTRATOR | RESEARCHER

Harvard University | Columbia University

Wil Castro is an accomplished planner and evaluator, grants administrator, and executive with both public and private sector experiences. He is currently serving as a Senator in the Thirty-fourth Guam Legislature as Vice Chairman on Education as well as Member on the Committee on Land, Environment, Agriculture and Procurement Reform and on the Committee on Health, Tourism, Military Affairs and Senior Citizens.

Senator Castro is a member of President Trump's Asian Pacific American Advisory Council under the Chairmanship of Guam Governor Eddie Baza Calvo and CNMI Governor Ralph DLG Torres. Senator Castro also serves on several regional as well as territorial policy and planning bodies relative to oceans, fisheries, coastal and coral matters.

Wil attained doctoral candidate status at Teachers College, Columbia University and holds a Master's Degree from Harvard University with additional graduate credits from the Massachusetts Institute of Technology. He also received training in Formative and Summative Assessment, Accreditation and Program Review, and Grantsmanship.

He is the father of four children and is engaged to Debra T. Cabrera, Ph.D., who is the former Dean of Academic Programs at the Northern Marianas College and is currently a Commissioner on the President's Advisory Commission on Asian Americans and Pacific Islanders.

Skills: Proposal writing & project management

Budget formulation and ROI analysis Formative and Summative Evaluative Methods

Graphic Arts Design & Development

Advanced Research Methodology Policy research, writing, and evaluation

The use of New Media in advancement

#### Certificates & Training:

Formative Assessment and Education. South Carolina. (Nov. 2008)

Accreditation and Program Review. WASC (Apr. 2008)

Grantsmanship II- Administrative Requirements and Cost Principles for Grants and

Other Agreements (April 2007), USDA Graduate School

Board-Union Labor Negotiations- (1998), Federal Mediation and Conciliatory Service

Teaching Certification in Secondary Social Studies, Vocational and Career Education (Exp. 2010)

#### Policy Body Memberships:

Member, President's Asian Pacific American Advisory Council

Member, United States Coral Reef Task Force

Member, Pacific Islands Regional Planning Body

Head of Delegation, Western and Central Pacific Fisheries Commission

Committee Member, Western Pacific Regional Fisheries Management Council

#### Civic Memberships:

4th Degree Knight, Knights of Columbus-Santa Teresita Council 13373

Honorary Member, Municipal Planning Council Barrigada, Guam

Chairman, Centennial Committee Young Men's League of Guam

#### **SUMMARY OF EDUCATION**

#### **COLUMBIA UNIVERSITY**

Doctoral Candidate\*, Instructional Technology and Media, Spring 2012

\*Doctoral Fellowship Award Recipient (full-ride and stipend for doctorate program)

Certificate courses taken: Advanced Information Technology Management Program 2006

#### HARVARD UNIVERSITY

Masters in Technology in Education\*, June 1997 \*Professional-technical Award Recipient (\$10,000 scholarship per year)

#### **UNIVERSITY OF GUAM**

B.A.Ed., Secondary Education\*, June 1996
\*Guam Teacher Corps. Scholarship Recipient (full tuition and fees with monthly stipend)

#### SUMMARY OF POSITIONS HELD

#### DIRECTOR

Bureau of Statistics and Plans / Government of Guam

#### CHIEF TECHNOLOGY OFFICER (ACTING)

Office of Technology / Government of Guam

#### DIRECTOR

Office of Institutional Effectiveness / Advancement Northern Marianas College / St. John's School

#### **ASSOCIATE SUPERINTENDENT (ACTING)**

Vocational/Technical Education Administrative Services Guam Public School System

#### CHIEF PLANNER/ ADMINISTRATOR (ACTING)

Research, Planning, and Evaluation Guam Public School System

#### **TEACHER / FACULTY MEMBER**

Guam Public School System / St. John's School

## CHIEF POLICY ADVISER/ SENIOR POLICY ANALYST

Guam Legislature (Office of Speaker Judi T. Won Pat) Guam Legislature (Office of Senator Angel L.G. Santos)

#### **SPECIAL ASSISTANT**

University of Guam President, and Chairman

#### GENERAL MANAGER/WEBMASTER

Guam Gifts.com

#### REFERENCES

#### **Professional**

The Honorable Eddie Baza Calvo Governor of Guam

The Honorable Dr. David Leon Guerrero Shimizu (former) Vice Speaker, 29<sup>th</sup>, and Senator, 23<sup>rd</sup> and 22<sup>nd</sup> Guam Legislature (former) Chairman, UOG Board of Regents

#### Character & Leadership

The Honorable F. Phillip Carbullido Associate Justice, Supreme Court of Guam

The Honorable Alberto C. Lamorena III Presiding Judge, Superior Court of Guam

Mr. Bob Pelkey President, Young Men's League of Guam

#### CONTACT INFO AVAILABLE UPON REQUEST

#### RELEVANT PROFESSIONAL EXPERIENCE

01/2017-present 34<sup>th</sup> Guam Legislature Hagatna, Guam

Senator

06/09-present St. John's School Tumon, Guam

Faculty Member and Director of Advancement

Served as a full-time teacher and part-time director for the region's premier pre-k through 12<sup>th</sup> grade college preparatory school. Achievements include the introduction of a Future Knights Merit Scholarship Program, establishment of the Governor's Council on Independent Schools, and initial discussion for the establishment of the Center for Education Statistics and Applied Research.

03/08-06/09 Northern Marianas College --- Office of the President

Director, Office of Institutional Effectiveness

As Terlaje, Saipan

The Office of Institutional Effectiveness (OIE) operates as an administrative support unit under the Office of the President. OIE is primarily responsible for: a) providing leadership and assistance in overseeing assessment activities; b) Facilitating major institutional planning; and, c) preparing official reports for and on behalf the college.

Served as Chairman of the Planning, Program Review, and Outcomes Assessment Committee (PROAC), member of the College Council, Budget and Finance Committee, and co-Chair to the Technology in Education Committee. PROAC is responsible for monitoring and facilitating all college-wide planning and assessment activities. PROAC is also responsible for setting the funding and planning priorities for the College each year.

Served as one of two (2) primary authors for institutional responses to WASC team recommendations concerning governance, planning, program review, and budgeting. Reports include: October 15, 2009 Show Cause Report, December 31, 2009 Supplemental Report, April 1, 2009 Show Cause Report. Primary author of the Institutional Excellence Guide An Organizational Guide to Shared Governance, Planning, Assessment, and Budgeting that was adopted by the College Council and accepted by the President, and the Board of Regents. Lead writer for the drafting of the Planning, Program Review, and Budgeting Manual (May, 2009).

11/07-03/08	Guam Public School System Office of the Superintendent Associate Superintendent, Vocational/Technical Education (Acting) (Assigned acting capacity beginning November, 2007)	Hagatna, Guam
08/07-11/07	Associate Superintendent, Administrative Services (Acting) (Assigned acting capacity beginning August, 2007)	Hagatna, Guam
05/07-08/07	Administrator, Research, Planning and Evaluation Division (Acting) (Assigned collateral title in June, 2007 to cover all non-academic areas of operation)	Hagatna, Guam
05/07-05/07	Chief Operations Officer (Assigned collateral title in June, 2007 to cover all non-academic areas of operation)	Hagatna, Guam
01/07-03/08	Chief Planner (Promotion from Program Coordinator IV, January, 2007)	Hagatna, Guam
05/06-01/07	Program Coordinator IVFederal Programs Division (Promotion from Teacher status, May, 2006)	Hagatna, Guam
01/06-05/06	Teacher III Untalan Middle School	Barrigada, Guam

Part of a management team of the Guam Public School System (GPSS) overseeing a local budget of approximately \$220 million inclusive of federal funded program eligibility approximating \$50million

by 19 divisions. <i>Excellence in Educ</i>	Primary author and architect of several initiatives as <i>eation</i> agenda for change. Select initiatives include: In for Public Education	
□ Excellence	e in Education agenda for change ommunity, Employee Relations Team scellence in Education Employee Recognition program ue Ribbon Schools program	
<ul> <li>Co</li> <li>Re</li> <li>Ka</li> <li>Do</li> <li>Wo</li> </ul>	technology agenda omprehensive Technology Audit evised Technology Master Plan attan Technology Center Pilot Project ocument Management Project ebsite redesign and construction aproved student-to-computer ratio district-wide	
□ Representa □ Member, S □ Project Are Federal Pro □ Chairman, □ Member, C □ Lead Adm □ Primary St □ Staff Liaise	r for several initiatives for and on behalf of the Superinte ative to Governor's Civilian-Military Impact Committee, Superintendent's Management Team chitect/Writer for the "High-Risk" Comprehensive Corrograms  Technology Master Plan Committee (August 2006-2007 Computerized Management & Maintenance System proje inistrator, Facilities and Maintenance Strategic Planning aff Liaison, Buildings and Grounds Committee, Guam Eaff Liaison, Strategic Planning Committee, Guam Education, Technology Committee, Guam Education, Technology Committee, Guam Education, Budget, Finance and Administrative Affairs Committee, Guaget, Finance and Finance Administrative Affairs Committee, Guaget, Finance Admini	Subcommittee on Education rective Action Plan (CAP) for (CAP) for ect team Committee ducation Policy Board tion Policy Board and
activities. The proassigned. Demons responsibility for compliance reports. Also responsible for a Strategic For Guam Pub	an administrative position responsible for directing all agram coordinator IV position is supervisory level with a strated commitment, work ethic and professional composition properties and writing of a sin addition to development of the budget narrative sin authorship or major contributing author to major planna actives and Maintenance Plana Plana School System-Corrective Action Plana Master Plana addent's Goals and Objectives	support staff for each program etencies have led to delegated Consolidated Grant quarterly nce initial date of assignment.
08/03-01/06	GuamGifts.com Founder, President & General Manager/Webmaster	Barrigada, Guam
operations of Guam partnerships with ma within several alterna (revenues, expenses capable in designing	nanaging director responsible for overall strategy developmes and fastest growing e-tailer. With the largest selection ajor channel partners, GuamGifts.com is poised for premium ative markets. Responsible for inception, management and grand investments) in excess of \$200,000 in past 18months. In the property of the p	on of local products and strategic product and service provisioning owth of start-up with total monies Knowledgeable and technically databases, dynamic and/or static
08/01-12/02	Twenty-Seventh Guam Legislature	Hagatna, Guam

#### Senior Policy Analyst (ginen I Ufisinan Senadot Angel L.G. Santos)

Drafting of laws, policies, constituent reports, news releases, marketing material, and responsible for review of all official correspondence and recommendations for action. Served as the primary point-of-contact for all media, public officials and constituency groups.

#### 01/01-08/01 & Board of Regents, University of Guam Mangilao, Guam 08/97 - 08/99Special Assistant to the Chairman and President Principally assigned to advise and serve the chairman of the board and president on all matters brought to the attention of the board and executive offices of the university. Responsible for research and analysis of board policy, development and practice; for the review and production of board agenda and support documents; and the advising of regents on course of action. Trained by the Federal Mediation and Conciliatory Service. Highly knowledgeable and experienced in: Academic, Personnel and Tenure matters Governance, promotion, grievances and arbitration Budget, Finance and Program Review University budget development, review, presentation and defense Scholarship Criteria for selection, management and tracking of recipients Student Affairs Student leadership and governance Presidential Search and Evaluation Search Modality (Committee set-up, Guidelines, Selection Criteria, Contract Negotiation) Board-Union management agreements 0 Review, evaluation and negotiation of matters between management and union membership Protocol University, Local and State official protocols Project Management, Fundraising, Accreditation Review **EDUCATION** COLUMBIA UNIVERSITY Doctoral Candidate\*, Instructional Technology and Media, Fall 2009 \*Doctoral Fellowship Award Recipient (full-ride and stipend for doctorate program) Certificate courses: Advanced Information Technology Management Program 2006 HARVARD UNIVERSITY Masters in Technology in Education\*, June 1997 \*Professional-technical Award Recipient (\$10,000 scholarship per year) University of Guam B.A.Ed., Secondary Education\*, June 1996 \*Guam Teacher Corps. Scholarship Recipient (full tuition and fees with monthly stipend) ACADEMIC AWARDS AND LEADERSHIP RECOGNITION(S) Civic Award Plaque of Recognition for Leadership, Lions Club Int'l Tumon, GU 1999 Civic Award "Outstanding Young Men of America" 1998 Washington DC **Harvard University** Cambridge, MA Dean's Award: Exemplary Leadership and Service Sp. 1997 Certificate of Achievement: Native American Program Certificate of Appreciation: Student Association Cabinet

SERVICE AND CONTRIBUTION AS A MEMBER OF THE BOARD OF REGENTS

RELATIVE TO COMMENDING WILLIAM CASTRO ON HIS OUSTANDING

Mangilao, GU

July 18, 1996

University of Guam Board of Regent's Resolution 96-23

#### 24th Guam Legislature, Committee on Rules Resolution No. 338 Hagatna, GU RELATIVE TO COMMENDING WILLIAM CASTRO ON HIS June 27, 1996 ACCOMPLISHMENTS AND ACCEPTANCE TO HARVARD UNIVERSITY **University of Guam** Mangilao, GU Graduated with honorable recognition **Cum Laude** Dean's List Fa. 1993- Sp. 1996 Guam Teachers Corps. Scholarship Recipient Fa. 1994-Sp. 1996 Regent Scholar Fa. 1995-Sp. 1996 President's List Sp. 1996 Who's Who in American Colleges and Universities Sp. 1996 Sp. 1996 Pi Sigma Alpha, Member: Inducted "Best Student Organization of the Year Award" AY 1994-1995 -Founder and President, Islander Foundation of Informed Leaders SAMPLE OF MAJOR GRADUATE PAPERS WRITTEN "Networking in Higher Education: Commonalities in Four-year Liberal Arts Institutions" "VIDEO CONFERENCING: Using technology to bridge the gap" "ISP Competitive Analysis: A Summative Evaluation of an Internet Service Provider Homepage" "A Formative Evaluation of Learning from Thin Air A Harvard-Smithsonian Project" An Introspective Analysis of University Governance at the Univ. of Guam IT strategy for a university using collaborative software and communication-ecological principles COMMUNITY SERVICE ACTIVITIES Untalan Middle School Parent Teacher Organization Current President St. John's Parent Teacher Organization Current Volunteer UOG Alumni Assoc. 2005-2007 Secretary Lions Club International (District 204, IFIL Club) 2000 Founder/Member/Officer Communications, Comp. & Tech in Ed. Stud. Org. 2000 Webmaster (Teachers College, Columbia Univ.) Lions Club International (District 204, IFIL Club) 1999 Charter President of Guam IFIL Lions Club Chairman [raised \$26K; 1,100 persons attended] Second Annual Charter Day Banquet 1999 1998 UOG Alumni Golf Classic Volunteer 1998 **UOG Alumni Association Fund Drive** Committee Member [brochure author and webmaster] Harvard University Indigenous Peoples Organization 1997 Co-coordinator Harvard University, Student Association Cabinet 1997 Representative Univ. of Guam Student Government Association 1994-96 Senator, Vice President, Student Regent RELEVANT COURSES IN SUPPPORT OF APPLICATION School Business Administration Columbia University 1999-2001 Ecology of Data-Driven Leadership Columbia University 1999-2001 School Finance Columbia University 1999-2001 Technology & School Restructuring Columbia University 1999-2001 Strategic Planning in Higher Education Harvard University 1996-1997 **Higher Education Administration** Harvard University 1996-1997 Public Policy in Higher Education Harvard University 1996-1997 Law, Technology & Public Policy Massachusetts Institute of Technology 1997 Technology, Education & Public Policy Columbia University 1999-2001 Intro to Management Systems Columbia University 1999-2001

Columbia University 1999-2001

Probability and Statistical Inference

Columbia University	1999-2001
Harvard University	1996-1997
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Harvard University	1996-1997
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