PORT OF GUAM

Resolution No. 2020-01

RELATIVE TO PETITIONING THE PUBLIC UTLITIES COMMISSION (PUC) FOR REVIEW AND APPROVAL TO AUTHORIZE EXPENDITURES OF $1,574,035.00 FOR CORAL RELOCATION AT HOTEL WHARF AND $800,000.00 U.S. DEPARTMENT OF DEFENSE OFFICE OF ECONOMIC DEVELOPMENT GRANT FOR THE OWNER'S AGENT ENGINEER'S CONTRACT

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE PORT AUTHORITY OF GUAM:

WHEREAS, on January 15, 2020, the General Manager wrote to the Public Utilities Commission (PUC) informing them of the requirement to review and approve an additional contract amount of the following sums towards the Port Owner's Agent Engineer (OAE) contract services with WSP USA, Inc. formerly known as Parsons Brinckerhoff:

(1) $1,574,035 for additional NEPA requirements for the Hotel Wharf project; and
(2) $800,000 from the Office of Economic Adjustment grant; and

WHEREAS, by virtue of this resolution, the Board of Directors hereby petitions the PUC to review such matters contained in the General Manager's letter of January 15, 2020 (attached); and

WHEREAS, the environmental permitting requirements for Hotel Wharf project consists of three components, which are: (1) construction management services request scope of work for a Request for Proposal; (2) coral relocation services scope of work; and (3) Guam Environmental Protection Agency Section 401 Water Quality Certification Application Permit; and

WHEREAS, the $1,574,035 funding in addressing the environmental requirements for Hotel Wharf will be from the Port Authority of Guam's Revenue Bond Funds; and

WHEREAS, on September 6, 2019, the Port was notified of its award of an $800,000 grant from Office of Economic Adjustment which will enable the Port to ensure its Capital Improvement Projects are aligned, planned, designed and constructed as sound investments that proactively take into account the evolving transshipment demands and changes in technology; and

WHEREAS, the grant will fund: (1) program management & coordination, and (2) an update of the 2013 master plan, (3) a customs inspection feasibility study, (4) architectural and engineering design scope revision of the new administration building annex and renovation of existing administration building, and (5) deep-draft wharf and fill improvements project feasibility study; and

WHEREAS, the Board of Directors at its regular meeting of January 27, 2020 hereby submits this petition to the PUC to respectfully review and consider approving an additional contract amount as stated above; and

RESOLVED, the Board of Directors authorizes management to formally transmit this petition and its resolution to PUC; and be it further

RESOLVED, the Chairman certify to and the Secretary attest to the adoption hereof and that a copy of this resolution be sent to the Public Utilities Commission.

PASSED AND ADOPTED UNANIMOUSLY BY THE BOARD OF DIRECTORS THIS 28th DAY OF JANUARY, 2020.

FRANCISCO G. SANTOS
CHAIRMAN, BOARD OF DIRECTORS
PORT AUTHORITY OF GUAM

ISA MARIE C. KOKI
SECRETARY, BOARD OF DIRECTORS
PORT AUTHORITY OF GUAM

PORT OF GUAM
ATURIDAT I PUETTON GUAHAN
Jose D. Leon Guerrero Commercial Port
1026 Cabras Highway, Suite 201, Piti, Guam 96925
Telephone: 671-477-5931/35 Facsimile: 671-477-2689/4445
Website: *www.portguam.com*

Lourdes A. Leon Guerrero
Governor of Guam
Joshua F. Tenorio
Lieutenant Governor

January 15, 2020

RECEIVED
JAN 16 2020
Public Utilities Commission
GUAM

Mr. Jeffery C. Johnson
Chairman Public Utilities Commission of Guam
Suite 207, GCIC Building
Post Office Box 862
Hagåtña, Guam 96932

Subject: (1) **PETITION:** Seeking PUC's **Approval** to Expend an **Additional $1,574,035.00 to existing PAG Owners/Agent Engineering (OAE) Services**; and
(2) PETITION: Seeking PUC's Approval to Expend an Additional $800,000 to **existing PAG Owners/Agent Engineering (OAE) Services.**

Reference: **RFP No. PAG-015-003 PAG/WSP USA Inc., Agreement dated September 4, 2015**

Håfa Adai Chairman Johnson:

The purpose of this letter is to file the Port Authority of Guam (PAG, Port) Petition to review and approve the additional contract amount of **$1,574,035.00** towards the existing PAG Owners/Agent Engineering (OAE) Services contract with WSP USA Inc., formerly known as Parson Brinkerhoff (OAE, WSP USA Inc., or Consultant), subject to the Public Utilities Commission (PUC) Contract Review Protocol of the PAG, Section 10.

Additionally, we are respectfully petitioning the PUC to review and approve an $800,000 increase to the PAG Port's contract with WSP USA, Inc.

Please note that as a condition of this grant award, these funds are to be used to fund the on-going owner agent contract. However, since this increase exceeds the 10% threshold per the PUC's Contract Review Protocol of the PAG, Section 10, PUC's approval is necessary before any of these funds can be expended.

Here is the breakdown relative to the additional contract amount of $1,574,035.00:

- **$774,035.00**
  - Task Order 3.1: Expanded H-Wharf Environmental Permitting Support Services;
  - Task Order 3.1 R2: Expanded H-Wharf Environmental Permitting Support Services Shifting from a CATEX Process to a Modified Environmental Assessment Process;
  - Task Order 3.1 R3: Expanded H-Wharf Environmental Permitting Support Services and H-Wharf Package Update; AND
  - Task Order 3.1 R4: H-Wharf Coral Relocation and Monitoring Services – mitigation activity required from 2020 to 2022 to ensure environmental compliance with the federal

OAE shall perform the services on a "Time-and-Materials" basis for an amount "Not-to-Exceed" Sixty-Four Thousand Seven Hundred Dollars and Zero Cents ($64,700.00)

Summary of OAE Services Funded by Port Revenue Bonds (Task Order 3.1 R4: H-Wharf Coral Relocation and Monitoring Services:

OAE services are to remove and relocate healthy stony coral colonies of a viable size for H-Wharf to potential selected recipient areas located adjacent to the H-Wharf location with Piti Harbor. This would be performed by CSA Ocean Sciences Inc. (CSA, Sub Consultant), with project management, coordination, quality assurance and third-party safety diver support services provided through WSP USA Inc.

The Scope entails the following:

1) Coral Relocation Plan

- CSA scientific staff will prepare and/or review a Coral Relocation Plan, as needed, outlining the coral removal, handling, transporting, and reattachment methods to be utilized, the approximate number of coral species to be relocated, coral size range, the locations of coral recipient sites, and potential post-relocation monitoring protocols.

2) Coral Relocation

- CSA will mobilize a team of diving marine biologists skilled in conducting coral relocation. Following mobilization of personnel and equipment to the site, the team will coordinate with PAG staff to ensure the relocation operations will be conducted in a safe and efficient manner. An initial dive team orientation survey of the wharf face will be conducted to confirm the size, health, and positons of potential coral colonies for relocation activities, followed by a delineation and marking of the coral recipient (reattachment) areas in accordance with the details of the CSA Technical and Commercial Proposal.

3) Coral Colony Monitoring

- A monitoring plan will be prepared as part of the Coral Relocation Plan to delineate the subsequent coral relocation success monitoring program. Between 125 and 150 of the reattached coral colonies, representative of the number, species, and sizes of the relocated corals, will be tagged for health and survival monitoring. Up to 100 naturally-occurring colonies at the recipient site(s) of the same size and species also will be tagged and mapped to serve as reference corals for the monitoring program. Monitoring will be performed in accordance with the party to this scope-f-work. WSP will also contract with Latte Marine Construction for local safety diver support services for the three specified monitoring events.

I. Justification for Granting the Petition

A. Mitigation Site Section and Justification for the Coral Relocation

According to the December 2019 Revised Compensatory Mitigation Plan for the Hotel Wharf and Access Road Maintenance and Repair Project, the Coral colonies identified for relocation within the Direct Impacts Zone will be moved from Hotel Wharf and the surrounding substrate to a location site located at Dog Leg Pier, approximately 700 linear ft. (213 meter) to the west of Hotel Wharf. (Photo 1).

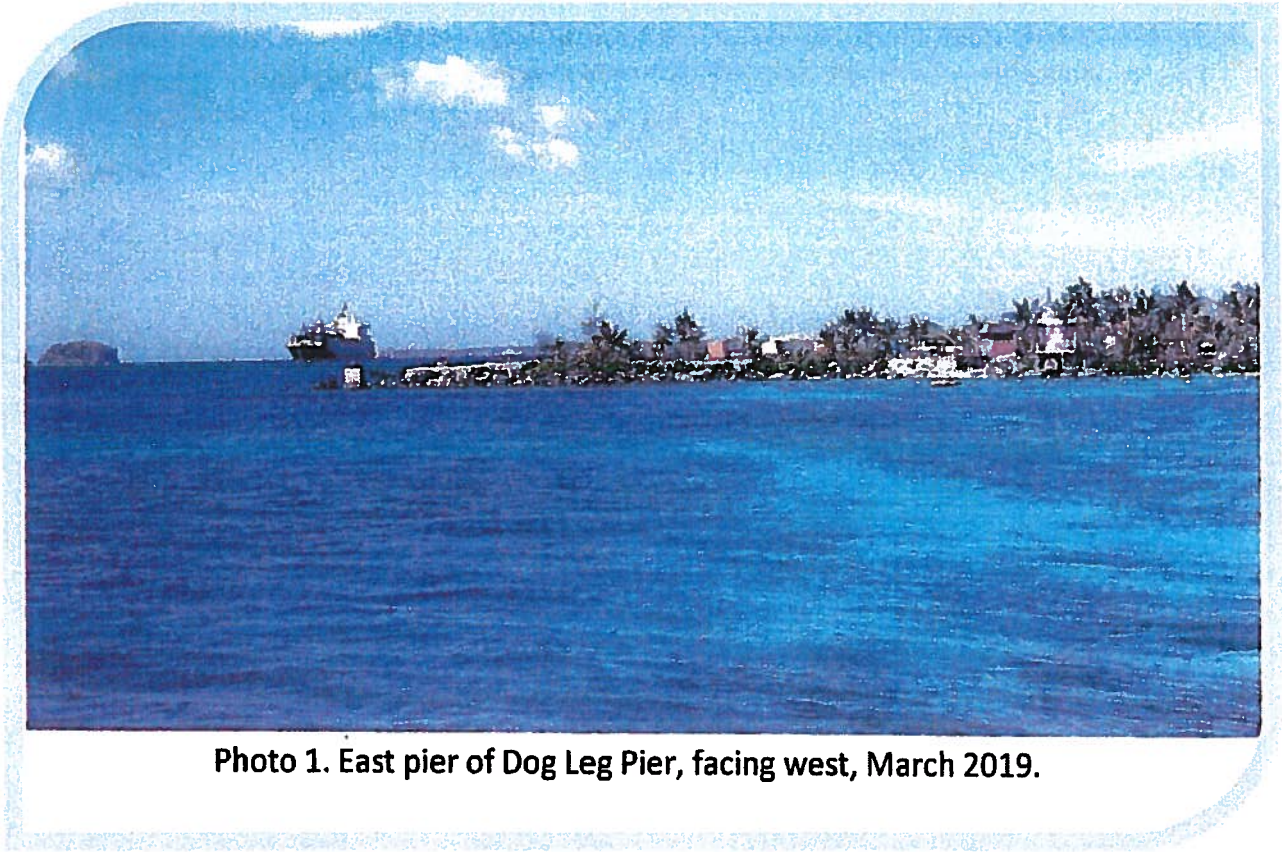


Photo 1. East pier of Dog Leg Pier, facing west, March 2019.

This relocation site was selected based on several key criteria, including:

1) Close proximity to the project site;
2) Presence of similar coral species and reef composition;
3) Suitable hard bottom substrate devoid of coral on which to attach relocated colonies;
4) Similar water depth and conditions; and
5) Assurance from PAG that the relocation site would be protected through land use controls and committed to this use in perpetuity.

observed in the area just to the west of the west pier. The reef flat and slop extend approximately 400 m beyond the area investigated, to where the reef tract intersects with Dog Leg Reef, and 200 m to the east, where it meets Hotel Wharf. (Photo 3).

Photo 3. Reef slope with dense *Porites rus* colonies (left) and patches of reef rock with low coral cover (right) at Dog Leg Pier. *Courtesy of D. Burdick.*

The overall structure of the natural reef area adjacent to Hotel Wharf is broadly similar to that of the reef area observed in the vicinity of Dog Leg Pier, with a shallow reef flat extending southward to a slope that terminates at a sand flat at approximately the same depth (10 m). Water conditions during the time spent at each site were similar; the close proximity of two reef areas suggests that water conditions and quality at both sites are similar year-round.

The composition of the coral community observed on the reef flat in both of these areas is generally similar. All species representing colonies suitable for transplantation that were recorded during surveys of the Hotel Wharf project area were observed on the reef flat hardbottom appears sufficient for receiving corals transplanted from the reef flat and mass Porites species transplanted from the area on the above shallow (~1.5 m) concrete beam extending across all sides of the wharf.

The slope along the Dog Leg Pier reef area hosts considerably greater coral growth and greater structural complexity in comparison to the slope of the natural reef adjacent to transitioning to the lower coral cover/lower structural complexity similar to the slope observed adjacent to Hotel Wharf, although the eastern extent of the Dog Leg Pier reef slope appeared to be transitioning to the lower coral cover/lower structural complexity similar to the slope observed adjacent to Hotel Wharf. Despite these noted differences, coral community composition (if not relative abundance) along the slopes of both reef areas are similar.

The survey also considered potential areas for coral colonies that may be required to be transplanted from the debris and patches of hardbottom scattered across the sand flat within the Indirect Impacts Zone of the Hotel Wharf project site, although relocation of these colonies is not proposed by PAG at this time. If such an action is mandated, these colonies could be placed on hardbottom along the deeper portion of the reef slope at Dog Leg Pier (to better match light conditions) or along the patches of hardbottom extending southward from the base of the reef slope near the west "pier". (Photo 5).

Photo 5. Sand and hardbottom along base of reef slope at Dog Leg Pier. *Courtesy of D. Burdick*

The species representing the vast majority of colonies suitable for transplant that were recorded in the Hotel Wharf Indirect Impacts Zone, which include massive Porites species, Porites rus, Pocillopora damicornis, and several Astreopora species, were all observed at similar depths at the Dog Leg Pier site. While it is not clear if the area of available substrate at the investigated area of the Dog Leg Pier site will be sufficient if all highly likely that sufficient amount of additional viable substrate can be found to the west and east of the area of reef investigated at Dog Leg Pier.

The final coral relocation sites within the vicinity of Dog Leg Pier will be selected once the work has started.

C. Coral Monitoring Plan and Post-Relocation Monitoring

Per coordination with USFWS under the Fish and Wildlife Coordination Act (FWCA), the PAG would perform a short, rapid marine biological assessment following the completion of in-water construction activities.

Department of Agriculture, Division of Aquatic and Wildlife Resources (DAWR)
Guam Endangered Species Act

- November 1, 2013 - The PAG sent a request to DAWR for information regarding permitting requirements for the proposed Hotel Wharf project.
- November 14, 2013 - DAWR participated in an agency coordination meeting to discuss environmental opportunities and constraints of the proposed project.
- January 2018 - A site visit was conducted with DAWR to discuss agency's concerns with potential discharge of stormwater at outfall S-108 outfall the sea turtle nesting beach.
- April 4, 2018 - A follow-up site visit was conducted with DAWR regarding a proposed alternative of discharging to outfall S-107 to avoid the sea turtle nesting beach.
- April 19, 2018 - DAWR concurred with the proposed alternative for stormwater discharge at outfall S-107, which completely avoids the sea turtle nesting beach.
  Coral Translocation Permit, 5 Guam Code Annotated (GCA), Section 63601
- February 28, April 25, and May 9, 2019 - The PAG and DAWR met and discussed the proposed translocation of corals that requires authorization by DAWR.

Fish and Wildlife Coordination Act (FWCA), Ms. Chelsa Muna-Brecht

- April 22, 2019 - The PAG sent a letter to DAWR requesting consultation under FWCA.
- May 14, 2019 - DAWR responded to the PAG with recommendations.

Guam Environmental Protection Agency (GEPA)

- November 1, 2013 - The PAG sent a request to GEPA for information regarding permitting requirements for the proposed Hotel Wharf project.
- November 14, 2013 - GEPA participated in an agency coordination meeting to discuss environmental opportunities and constraints of the proposed project.
- June 4, 2018 - The PAG submitted an application for certification of compliance with the Guam Water Quality Standards, under Section 401 of the Clean Water Act.
- December 23, 2019 – GEPA requested the PAG provide additional information to the questions concerning the Draft Water Quality Monitoring Plan.

State Historic Preservation Officer (SHPO), Department of Parks and Recreation

- August 13, 2013 - The PAG sent a request to the Guam SHPO for concurrence under Section 106 of the National Historic Preservation Act (NHPA) with a determination of no adverse effect to historic properties for the proposed Hotel Wharf and maintenance road undertaking.
- September 13, 2018 - The SHPO issued a letter to the PAG that concurred with the PAG's determination of effect, provided that PAG contract a qualified underwater archaeologist to conduct a survey of the Hotel Wharf area of potential effect (APE).
- January 4, 2019 - MARAD and PAG amended the project description, updating the project footprint due to incorrect calculations from AMEC (2014) that were used in the initial determination of effect.

- April 4, 2019 - USFWS sent a response to the PAG concurring with the determination that the project may affect but is not likely to adversely affect the green sea turtle (*Chelonia mydas*) and the hawksbill sea turtle (*Eretmochelys imbricata*).

Fish and Wildlife Coordination Act (FWCA), Ms. Katherine Mullett

- April 22, 2019 - The PAG transmitted a letter to USFWS requesting consultation under

FWCA. Similar letters were transmitted on the same date to DAWR and NMFS.

- April 24, 2019 - USFWS confirmed receipt of the letter and initiated consultation.
- May 13, 2019 - USFWS responded to the PAG with recommendations.

E. Regulatory Agency Review and Permit Status Update

The PAG obtained concurrence with the above listed federal and local regulatory agencies, with the exception of Guam EPA's 401 Water Quality Certification; Guam Department of Agriculture Coral Relocation Permit; and the U.S. Army Corps Engineers Permit.

Table 1 – Consultation and Permit Requirements

Item	Agency / Description	Urgent	Pending	Resolved
1	NOAA | EFH Consultation			X
2	FWCA Consultation Response to USFWS			X
3	FWCA Consultation Response to DAWR		X	
4	Coral Relocation Permit - DAWR		X	
5	Department of the Army Permit - Corps		X	
6	401 Water Quality Certification - Guam EPA		X	
7	Water Quality Monitoring Plan - Guam EPA			X
8	Sea Turtle Monitoring Plan - NOAA/USFWS			X
9	Draft Technical Report for Maritime Archaeological Survey			X
10	Consulting Party letters for Section 106 process			X
11	Finalize Draft EA, submit to PAG			X
12	Prepare Notice of Availability for Draft EA			X
13	Prepare NOA for Final EA and FONSI			X
14	Receive signed FONSI from MARAD			X
15	Publish NOA for Final EA and FONSI			X

- The Port will use the current OAE Contract, which expires on September 8, 2020. This is the final option year of renewal under this current contract with WSP USA Inc.

Summary of OAE Services Funded by Office of Economic Adjustment:

OEA's program of assistance will support the extension of the OAE contract for ongoing and future technical services. The OAE services will include:

1) Program Management and Coordination
2) 2020 Master Plan
3) Customs Inspection Feasibility Study
4) Conceptual Planning and Development of a scope of work for A&E Design Services of the New Administration Building Annex and Renovation of the Existing Administration Building
5) Deep-Draft Wharf and Fill Improvements Project Feasibility Study

Consultant shall perform the services on a "Time-and-Materials" basis for an amount "Not-to-Exceed" Eight Hundred Thousand Dollars and Zero Cents ($800,000.00)

IV. Conclusion

PAG and the U.S. DOT Maritime Administration executed the Tiger Grant on September 6, 2019, for the Rehabilitation of H-Wharf, requiring full environmental compliance with the federal and local regulatory agencies. Therefore, this Coral Relocation Project is imperative, and necessary to bring PAG's Modernization Plan closer to implementation.

In addition, the recent approval of the OEA grant allows for the continuation of PAG's modernization efforts through the identification, implementation, and completion of major Port Modernization Program (PMP) projects. Since the scope of these task orders is critical to the Port's bond-funded projects, we humbly request the PUC's approval in order for PAG to comply with PAG's Contract Review Protocol, Section 10, specifically requiring that "PAG shall not incur expenses for PUC approved internally financed contracts and obligations in excess of 10% over the amount authorized by the Commission without prior PUC approval. In the event that PAG estimates that it will exceed the PUC approved level of expenditures by more than 10%, it shall submit to the PUC the revised estimate and full explanation of all additional costs."

Si Yu'os Ma'ase, Mr. Chairman and members of the PUC for providing PAG with the necessary regulatory guidance and support. Please let us know if you have any questions, or require additional information.

Respectfully,

Rory J. Respicio
General Manager

Attachment

1. **PAG Owners/Agent Engineer Services Task Order Proposal R2 H-Wharf Coral Relocation Services, Exhibit A Scope of Work, CSA Ocean Sciences Inc., Technical & Commercial Proposal, and Coral Relocation Proposal Estimate**

Port Authority of Guam
Owner/Agent Engineer Services

Task Order Proposal R2
H-wharf Coral Relocation Services

This Task Order Proposal is made by WSP USA, Inc. with offices in the Guam International Trade Center, 590 South Marine Drive, Suite 421, Tamuning, Guam 96913 ("CONSULTANT") and when signed by both parties constitutes a contract between the CONSULTANT and the JOSE D. LEON GUERRERO COMMERCIAL PORT ("PORT") with offices at 1026 Cabras Highway, Suite 201, Piti, Guam 96925.

A. CONSULTANT shall perform the necessary Services as set forth in Exhibit A.

B. CONSULTANT shall perform the Services on a "Time-and-Materials" (T&M) basis for a "Not-to-Exceed" (NTE) amount of Four-Hundred-Eighty-Two-Thousand-Seven-Hundred-Dollars ($482,700.00) and the PORT agrees to pay progress sums invoiced for said Services in accordance with the provisions of the Owner/Agent Engineer Services AGREEMENT, upon satisfactory execution of said Services on a monthly basis.

C. The PORT agrees that the signature of the General Manager, affixed hereto, constitutes CONSULTANT's overall Notice-to-Proceed for performance of the Services described herein.

D. It is understood that this scope of work is not covered by existing OEA Grant funding.

All other terms and conditions of the Owner/Agent Engineer Services AGREEMENT shall remain unchanged except as modified herein.

BY THE SIGNATURES BELOW of their authorized representatives, the parties affirm the terms of this Modification and agree to be bound accordingly.

PORT AUTHORITY OF GUAM:

Signature: _____

Date: _____

Name: _____

Title: _____

CONSULTANT:

Signature: Robert S. Johansen

Date: 12/4/19

Name: Robert S. Johansen, PE (GU 1872)

Title: Project Manager, AVP

CONSULTANT:

Signature: _____

Date: 12/4/19

Name: Randall Urasaki

Title: Vice President, Hawaii Area Manager

Task Order Proposal R2
H-wharf Coral Relocation Services

EXHIBIT A

SCOPE OF WORK
H-wharf Coral Relocation Services

These services are to remove and relocate healthy stony coral colonies of a viable size from H-wharf to potential selected recipient areas located adjacent to the H-wharf location within Piti Harbor. This is being done to provide partial mitigation for the impacts of the H-wharf construction activities as required by the respective Guam environmental permitting agencies. The primary services will be performed by CSA Ocean Sciences Inc. (SUBCONSULTANT), with project management, coordination, quality assurance and third-party safety diver support services provided through WSP USA Inc. (CONSULTANT).

SCOPE:

Coral Relocation Plan: CSA scientific staff will prepare and/or review a Coral Relocation Plan, as needed, outlining the coral removal, handling, transporting, and reattachment methods to be utilized, the approximate number and coral species to be relocated, coral size range, the locations of coral recipient sites, and potential post-relocation monitoring protocols.

Coral Relocation: CSA will mobilize a team of diving marine biologists skilled in conducting coral relocation. Following mobilization of personnel and equipment to the site, the team will coordinate with Port Authority of Guam staff to ensure the relocation operations will be conducted in a safe and efficient manner. An initial dive team orientation survey of the wharf face will be conducted to confirm the size, health, and positions of potential coral colonies for relocation activities, followed by a delineation and marking of the coral recipient (reattachment) areas in accordance with the details of the CSA Technical and Commercial Proposal, version 05, attached hereto and made a party to this scope of work, Attachment B.

Coral Colony Monitoring: A monitoring plan will be prepared as part of the Coral Relocation Plan to delineate the subsequent coral relocation success monitoring program. Between 125 and 150 of the reattached coral colonies, representative of the number, species, and sizes of the relocated corals, will be tagged for health and survival monitoring. Up to 100 naturally-occurring colonies at the recipient site(s), of the same size and species, also will be tagged and mapped to serve as reference corals for the monitoring program. Monitoring will be performed in accordance with the details of the CSA Technical and Commercial Proposal, version 05, attached hereto and made a party to this scope-of-work, Attachment B. WSP will also contract with Latte Marine Construction for local safety diver support services for the three specified monitoring events.

Invasive Octocoral Species Survey: During the initial dive team orientation survey of the wharf face, CSA scientists will sample growths of what may potentially be the invasive octocoral species, Carijoa riisei, which is reported to be growing along the southern wharf face. Specimens will be photographed, collected, preserved in alcohol, and submitted to the Guam Department of Agriculture for identification confirmation. If the species has a limited distribution along the wharf face, CSA divers could carefully collect all observable specimens, being careful to avoid breakage and subsequent spread, and deliver the material to the Guam Department of Agriculture for disposal.

Task Order Proposal R2
H-wharf Coral Relocation Services

SCHEDULE:

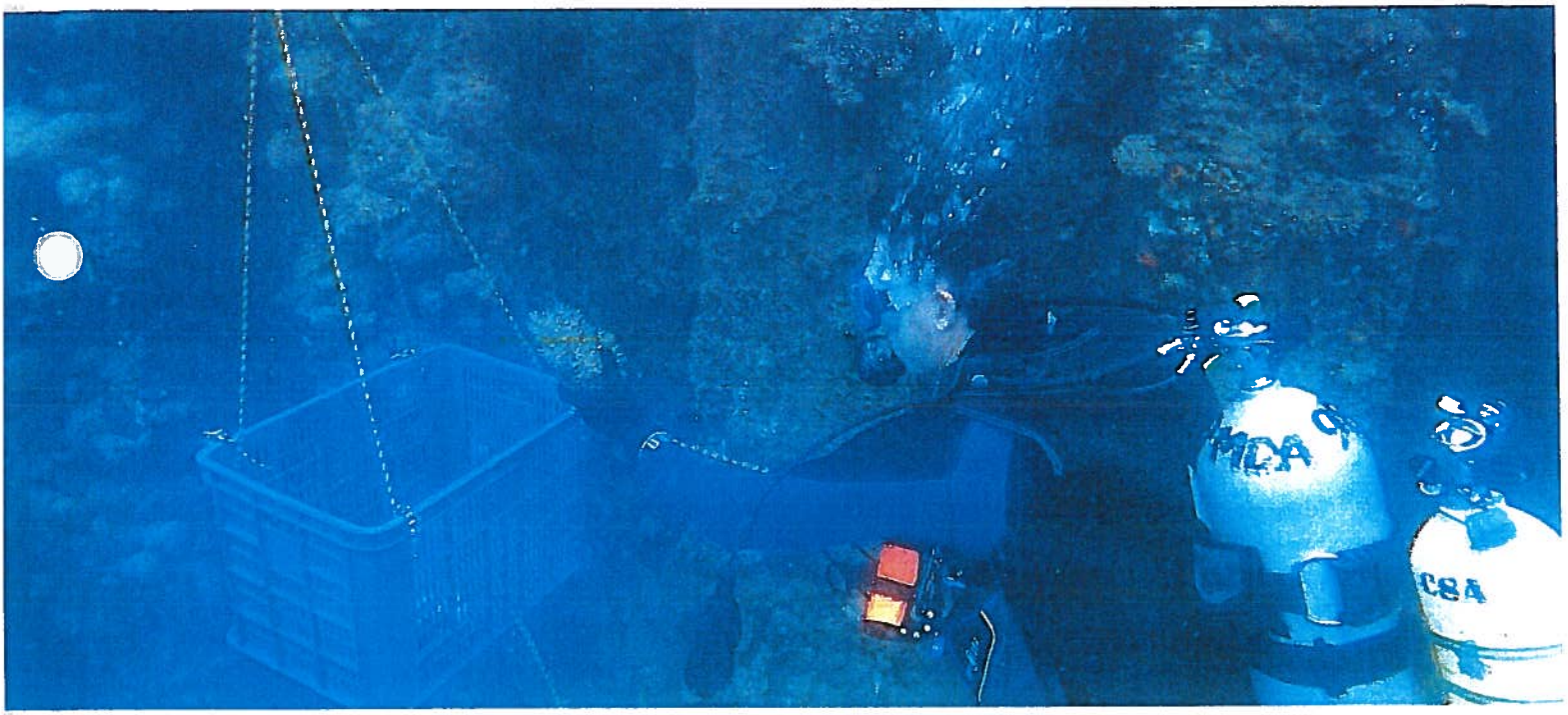
The schedule for performance is as defined within Attachment B. The initial planning, assessments, and relocation services shall commence based upon Guam weather and coral bleaching condition assessments and shall be completed prior to the planned debris cleanup activities to be performed by the construction contractor. It is assumed that these initial activities can be undertaken during 2019 or may be performed later depending upon the date of contract initiation, the weather and/or coral bleaching conditions being experienced. In any case the work must be performed in a timely manner so as not to impact the H-wharf contract start of construction date.

The planned dates for the subsequent three monitoring surveys and reports, at 6-months, 18-months and 36-months, shall be determined upon the actual completion date of the coral relocation and submittal of the Baseline Monitoring Report. The actual dates will be coordinated between WSP, CSA and the PORT based upon actual climatic conditions and staff scheduling considerations for each monitoring event.

PROPOSAL ESTIMATE:

A detailed cost estimate is provided as Attachment C. The following clarifications and/or exceptions apply to this proposal:

- WSP has included a 10% markup and Guam GRT to the CSA and Latte proposal values in this proposal.
- The CSA Proposal Terms located on pages 10 & 11 of Attachment B apply to this proposal.
- Any permitting costs required to perform these services shall be paid directly by the PORT.
- A $15,000 Port controlled contingency is included for unforeseen conditions and/or circumstances that may arise during the execution of these services and shall only be used upon written authorization from the PORT.



TECHNICAL & COMMERCIAL PROPOSAL

A Proposal for the Relocation of Stony Corals from the Face of Hotel Wharf, Outer Apra Harbor, Guam

Attachment B

Submitted to:

PORT OF GUAM

Port Authority of Guam
1026 Cabras Highway, Suite 201
Piti, Guam 96915

Submitted By:

CSA

CSA Ocean Sciences Inc.
8502 SW Kansas Avenue
Stuart, Florida 34997
Tel: +772-219-3000

TRACE CERTIFIED PEC AUTHORIZED PROVIDER SafeGuild

The following versions of this proposal have been issued:

Prepared For:	Prepared By:
WSP USA, Inc. **Mr. Robert Johansen, PE**	CSA Ocean Sciences Inc. **Keith Spring** Reef Ecologist Tel: 772-219-3019 | Cell: 561-762-6064 kspring@conshelf.com

Ver.	Date	Description	Approved	
02	3/27/2019	Relocation of stony corals: Outer Apra Harbor, Guam	DK	FA
03	7/30/2019	Relocation of stony corals: Outer Apra Harbor, Guam		
04	9/11/2019	Cost revision	KS	FA
05	11/11/2019	Second cost revision	KS	FA

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1.0 INTRODUCTION

The Port Authority of Guam is proposing to perform maintenance and repair actions at Hotel Wharf, located along the northern edge of Apra Harbor, Guam. These activities will include the replacement of the existing wharf cap, tie rods and anchoring, as well as the installation of new sheet piles outside the existing face of the wharf. This construction will result in the loss of all marine communities attached to the face of the wharf and within close proximity to the base of the structure. To assess the potential negative impacts, surveys were conducted to identify corals, benthic biotic cover, macroinvertebrates, and Endangered Species Act (ESA)-listed or candidate species occurring within the identified project area (Burdick, 2019[1]). The survey results indicated that more than 6,000 coral colonies are present within the area of direct impact on the face of the wharf and along the base. Although many corals may be too small to successfully remove and relocate, there are a significant number that could be readily moved to an adjacent hard bottom habitat. Following the completion of the surveys, Duenas, Camacho & Associates, Inc. (DCA) requested CSA Ocean Sciences Inc. (CSA) to provide a cost proposal to remove and relocate healthy stony coral colonies of a viable size to potential selected recipient areas located adjacent to the wharf location, to provide partial mitigation for the impacts of the construction activities.

2.0 SCOPE OF WORK

2.1 CORAL RELOCATION

CSA scientific staff will prepare or review a Coral Relocation Plan, as needed, outlining the coral removal, handling, transporting, and reattachment methods to be utilized, the approximate number and coral species to be relocated, coral size range, the locations of coral recipient sites, and potential post-relocation monitoring protocols.

Healthy coral colonies ranging in size from 10 cm up to approximately 100 cm diameter and attached to the face of the wharf or debris at the wharf base may be feasibly and safely relocated. This includes an estimated 194 colonies at the wharf base/seafloor and approximately 636 colonies on the wharf face, for a total of 830 coral colonies. Corals that are stressed, bleached, or diseased, have encrusting sponge cover, or are <10 cm diameter have a much lower chance of survival and would not be relocated.

CSA will mobilize a team of diving marine biologists skilled in conducting coral relocation, led by Mr. Keith Spring, a reef ecologist with more than 25 years' experience in coral relocation and reef rehabilitation. Following mobilization of personnel and equipment to the site, the team will coordinate with Port Authority of Guam staff to ensure the relocation operations will be conducted in a safe and efficient manner.

An initial dive team orientation survey of the wharf face will be conducted to confirm the size, health, and positions of potential coral colonies for relocation activities, followed by a delineation and marking of the coral recipient (reattachment) areas. An area in the vicinity of Dog Leg Pier has been tentatively identified as a potential recipient site for the corals from Hotel Wharf (Burdick, 2019[1]). Dive teams will then initiate coral removal and relocation activities. Selected coral colonies will be carefully removed from the wharf face and adjacent direct impact areas using hand tools, including 3- to 5-lb hammers and masonry chisels, while minimizing secondary damage and breakage of the corals. Detached corals will be placed in plastic crates, either on the seafloor or suspended from surface floats. After the removal of a

[1]Burdick, D R. 2019. Marine surveys for the proposed repair and maintenance of Hotel Wharf, Apra Harbor, Guam. A report for Duenas, Camacho & Associates, Inc. 119 pp.

sufficient number of colonies, they will be transported by boat to the adjacent recipient sites where they will be placed on the bottom prior to being securely reattached.

Corals will be reattached to a suitable hard bottom substrate at water depths similar to the collection depths on the wharf face using a Portland cement mixture. The reattachment substrate will be properly cleared of any encrusting and fouling biota before coral attachment and care will be taken to not disturb or impact adjacent living marine resources.

2.2 RELOCATED CORAL COLONY MONITORING

A monitoring plan will be prepared as part of the Coral Relocation Plan to delineate the subsequent coral relocation success monitoring program. Between 125 and 150 of the reattached coral colonies, representative of the number, species, and sizes of the relocated corals, will be tagged for health and survival monitoring. Up to 100 naturally-occurring colonies at the recipient site(s), of the same size and species, also will be tagged and mapped to serve as reference corals for the monitoring program. These colonies will be assessed immediately following the completion of relocation activities, with parameters including reattachment integrity, maximum colony diameter, and coral health criteria such as paleness or bleaching, evidence of predation, bio-fouling from algae or encrusting invertebrates, and disease. The monitoring program will include a baseline survey at project completion followed by monitoring surveys at 6 months, 18 months, and 36 months post-project completion.

2.3 ASSESSMENT FOR THE INVASIVE OCTOCORAL SPECIES *CARIJOA RIISEI*

During the initial CSA dive team orientation survey of the wharf face, CSA scientists will sample growth of what may potentially be the invasive octocoral species *Carijoa riisei*, which is reported to be growing along the southern wharf face. Specimens will be photographed, collected, preserved in alcohol, and submitted to the Guam Department of Agriculture for identification confirmation. If the species has a limited distribution along the wharf face, CSA divers could carefully collect all observable specimens, being careful to avoid breakage and subsequent spread, and deliver the material to the Guam Department of Agriculture for disposal.

3.0 QUALIFICATIONS AND EXPERIENCE

CSA Ocean Sciences Inc. (CSA) is committed to examining environmental issues that affect water resources, estuaries, coastlines, and oceans from our local communities to international settings. CSA was founded in 1970 as an environmental consulting firm and is based in Stuart, Florida, with international branch offices or affiliate companies in Port of Spain, Trinidad; Rio de Janeiro, Brazil; Nicosia, Cyprus; Doha, Qatar; Singapore; and Perth, Australia.

Our nearly five decades of experience in aquatic studies and surveys spanning our local rivers to the deep ocean includes sampling, monitoring, mapping, assessment, mitigation and reporting. Our team is composed of leaders in research and the environmental consulting industry with specialties in water quality monitoring, protected species assessments, coral and seagrass habitat restoration, environmental permitting, and hydrographic surveying.

CSA's full-time staff members include numerous senior scientists with more than 30 years of experience, experienced biologists with more than 10 years of experience, a team of five geographic information systems (GIS) analysts and a database administrator, operations specialists, a document production team, and support technicians (in addition to management and administrative personnel). Our scientific and operations personnel come from a wide range of backgrounds, including marine biology and ecology, marine chemistry, oceanography, acoustics, surveying, resource management, mitigation, restoration, and

environmental permitting within academia, government, and industry. CSA's team of restoration specialist experience includes developing international guidelines for coral relocation and monitoring; conducting a coral and seagrass restoration/mitigation workshop for the Gulf Corporation Council; participating as expert panel member for the Southeast Florida Coral Reef Initiative workshop "Maritime Industry & Coastal Construction Impacts" to develop guidelines for rapid response to and restoration of coral reef injuries; and being a part of the interdisciplinary team for developing a Restoration Plan and Programmatic Environmental Impact Statement to address ecological restoration of coral reef and seagrass for the United States National Park Service and leading the publication of U.S. national guidelines for seagrass restoration.

Over the past 48 years, the CSA team has conducted a large number of coral reef assessment, research, relocation, and monitoring programs and projects. Primary objectives of coral relocation programs include accelerating habitat recovery and reducing lost ecological services associated with natural resource damage. CSA's team of internationally recognized restoration specialists provide expertise for services to assess, enhance, rehabilitate, and monitor marine habitats damaged and/or at risk from proposed actions, accidents and natural events. CSA staff alone have successfully relocated or reattached more than 62,000 hard corals and 13,000 soft corals/octocorals on more than 60 projects as mitigation for marine construction, pipeline placement, harbour dredging projects, and reef restoration sites since 1994. CSA survey staff will tentatively include Mr. Keith Spring, Mr. Rex Baumberger, and Mr. Jeffery Landgraf, each of whom has participated in dozens of coral relocation projects and reef assessment surveys and who have more than 50 years of combined reef restoration and survey experience throughout the world. **Table 1** provides a summary of success rates for monitored coral relocation projects conducted by CSA since 2000, including three recent projects in the Guam and CNMI region managed by Mr. Spring.

Table 1. Monitored coral relocation projects conducted by CSA since 2000.

Project Location and Country	Project Date	Monitoring Group	Number of Colonies Relocated: Hard Coral (Soft Coral) [Sponge]	Number of Colonies Monitored: Hard Coral (Soft Coral) [Sponge]	Number of Species: Hard Coral (Soft Coral) [Sponge]	Monitoring Percentage Survival: 6 months	12 months	24 months
Alder Cay, Bahamas (CSA)	2001	CSA, 2004	1876 (2977)	164 (300)	26 (20)		90% (86%)	69% (64%)
Hollywood, FL Ocean Outfall Stony Coral Transplantation Monitoring (Marine Resources, Inc.)	2002	National Coral Reef Institute	1,150	1,000	~20		100%	97%
M/V *WAVE WALKER* Grounding Reef Restoration (Plantation Key, FL, USA) (Marine Resources, Inc.)	2002	Franklin et al., 2005	10	10	4?			100%
MARGARA Grounding Reef Restoration, Puerto Rico	2006-2009	CSA, PR DNER, & NOAA	7,000 (5,000)	200		>95%	>95%	>95%
Qatargas Coral Relocation Project (Ras Laffan, Qatar) (CSA)	2007	Kilbane et al., 2008	4,500	285	8		99%	97%
New Doha Port Coral Relocation (Al Wakra, Qatar) (CSA)	2012	CSA, 2015	10,046 (562)	400 (53)	11 (6)	(100%)*	90%	87%

Project, Location, and Contractor	Project Date	Monitoring Group	Number of Colonies: Relocated (Hard Coral) (Soft Coral) [Sponge]	Number of Colonies: Monitored (Hard Coral) (Soft Coral) [Sponge]	Number of Species (Hard Coral) (Soft Coral) [Sponge]	Monitoring Percentage Survival: 6 months	12 months	24 months
Barzan RasGas Coral Relocation (Ras Laffan, Qatar) (CSA)	2012	CSA, 2016	1,693	161	9		100%	96%
Sur Independent Power Plant Coral Relocation (Sur, Oman) (HMR and CSA)	2012	HMR, 2013	2,649 (411)	201 (49)	20 (7)	99.5% (86%)	98% (63%)	96.5% (49%)***
A'Seeb Wastewater Project Coral Relocation (Muscat, Oman) (HMR and CSA)	2014	HMR, 2015	1,633	100	15		96%	
RasGas Flow Assurance Project Coral Relocation (Ras Laffan, Qatar) (CSA)	2014	CSA, 2016	1,255	100	12		100%	
Port of Miami non-*Acropora* Coral Relocation (Miami, Florida) (CSA)	2014	CSI, 2016a	924	250	22		83%	
Port of Miami *Acropora cervicornis* Coral Relocation, USA	2014	CSI, 2016b	38	38	1		97%	
Port of Miami Compensatory Mitigation (hard corals, soft corals, sponges) (Miami, Florida) (CSA)	2014	CSA, 2016c	382 (144) [50]	80 (30) [50]	18 (8) [1]	[96%]		
Inner Apra Harbor, Guam (CSA)	2015	CSA, 2017	96	96	4	99%**	99%***	96%****
Outer Apra Harbor, Guam (CSA)	2017	CSA, 2018	490	50	23	100%*	96%	
CNMI ATISA Cable Installation Coral Relocations (Guam, Rota, Tinian, Saipan) (CSA and DCA)	2017	CSA, 2018	195	121	24	77%+		

*2 months; **8 months; ***15 months; ****20 months; + Severe regional coral bleaching event impacted survival rates.
[ ] *Xestospongia*.

CSA scientists recently completed constructing and monitoring experimental coral relocation conducted within Inner Apra Harbor for the Navy, during which carbonate boulders were placed as a coral reattachment substrate at the south end of the harbor. A total of 96 corals from four species were then removed from the face of X-Ray Wharf and reattached to the boulders in about 2 to 2.5 m water depths. Despite being reattached in what could be classified as a less than optimal location with high turbidity, river runoff, and high sedimentation, after 20 months there was a 96% survival rate for reattached colonies compared to 92% survival for adjacent reference colonies. Colonies of the branching coral species *Porites cylindrica* have shown branch tip growth rates approaching 1 cm per month in fragmented branches reattached to the new reef structures, many colonies of reattached *Pocillopora damicornis* have more than doubled in size, and *Porites rus* colonies also showed good growth (**Image 1**).

During a second coral relocation project conducted in Guam in late 2017, CSA scientific staff relocated nearly 500 coral colonies that were growing on man-made debris off the base of Lima Wharf inside Inner

Apra Harbor to the crest of a previously dredged mound southwest of Western Shoals in the Outer Harbor. The CSA team stabilized the rubble-covered surface of the reattachment site using heavy-duty plastic mesh secured to the bottom with dozens of fiberglass and steel reinforcement rods driven up to 1 m into the seafloor and anchored to the mat with heavy plastic fastening clips. Coral colonies were then transported to the site and attached to the mat at each of the reinforcement rod and mat intersections using a Portland cement mixture, effectively integrating the corals, mat, and buried reinforcement rods into a

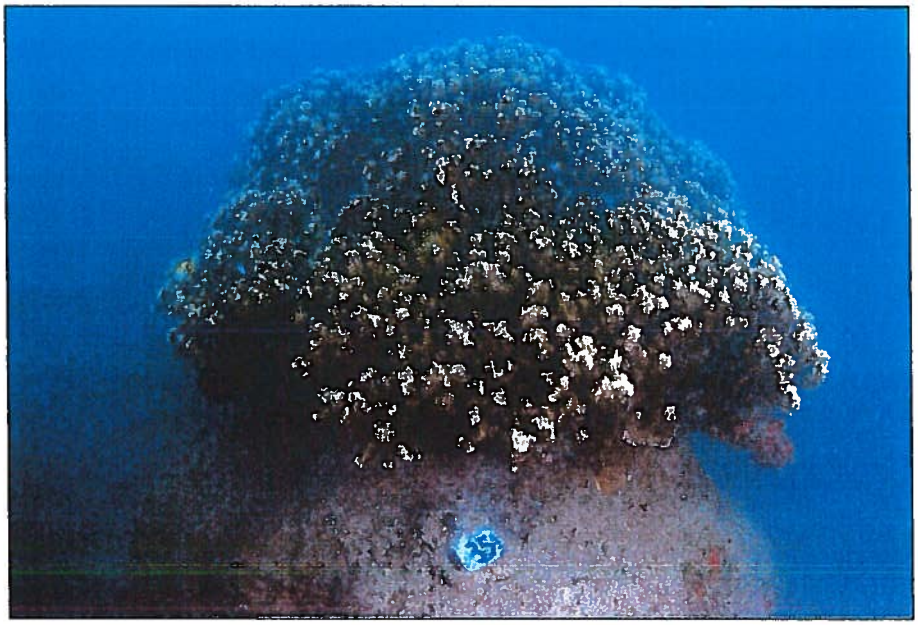

Image 1. A colony of reattached *Porites rus* that exhibited a 33% increase in diameter (from 75 cm up to 100 cm) within a 600-day period following attachment to a boulder within Inner Apra Harbor.

secure structure which also will prevent the movement of the underlying rubble-covered bottom. Following coral attachment, a total of 50 reattached coral colonies and 50 reference colonies in an immediately adjacent reef area were tagged for subsequent monitoring (**Image 2**). Coral survival rates were 100% at 2 months and 96% at 12 months after project completion.

Image 2. CSA divers tagging reattached coral colonies at a relocation site at the crest of a previously dredged reef mound in Outer Apra Harbor in 2017.

4.0 PROJECT SCHEDULE

Task	Description	Est. Days	Week 1	2	3	4	5	6	7	8	9	10
	NTP/Contract	0-14										
	Mobilization to site	3										
	Coral removal and reattachment (830 colonies)	9										
	Coral tagging, mapping, and baseline monitoring	3										
	Demobilization	2										

5.0 CSA CORPORATE OVERVIEW AND HSSE REVIEW

As a leading international marine environmental consulting firm, CSA attaches great importance to its Health, Safety, Security, and Environment (HSSE) program to protect human health, avoid and prevent incidents and injuries, and minimize impact to the environment.

Because we view HSSE as an integral component of our business model and critical to our ability to deliver quality services and products to our clients, CSA emphasizes the importance of HSSE for every activity and provides the resources, knowledge, and training necessary for staff to meet HSSE objectives. We actively manage our business activities to achieve and exceed the highest U.S. and international safety and environmental performance standards, while conducting our operations in strict compliance

with applicable U.S. and host country laws, government regulations, contractual agreements, and other HSSE-related requirements.

We constantly monitor and assess our processes to continually improve our HSSE program. We pledge to safeguard the people and environment at every location in which we operate. At CSA, we employ many different procedures to ensure safe operations and promote a safety culture throughout our organization. Conducting business around the world requires that we comply with international standards in addition to Occupational Safety and Health Administration (OSHA) and U.S. Environmental Protection Agency (EPA) regulations.

CSA's senior management completely supports the HSSE program and actively participates in safety meetings, training, and program management. This level of attention and dedication to safety makes it possible for CSA personnel to adjust the programs as necessary to meet client requirements in addition to fostering a safety-first mentality by removing the roadblocks to free and open employee participation and ownership of the CSA Safety Culture.

Notably, CSA recently received the Sunshine State Safety Recognition Award for employee and management emphasis on safety. CSA's commitment to safety is reflected in the daily activities of its personnel as well as the personal involvement from management in support of the safety program. The Sunshine State Safety Recognition Award serves as validation of a company's achievements and track record. The Sunshine State Safety Recognition Award commends Florida's employers and employees in all industries who proactively and routinely engage in job safety. The award goes to small businesses that implement sound safety initiatives to better protect employees on the job.

Achieving Standards

- PEC Safety Authorized Provider for SafeGulf, SafeLandUSA, and H2S Clear–provides trained, professional safety personnel for offshore environmental monitoring and marine activities;
- Organizational Member of the American Academy of Underwater Sciences (AAUS) and the Scientific Boating Safety Association (SBSA);
- CSA utilizes a Safety and Environmental Management System (SEMS) approach to safety program administration;
- CSA is implementing ISO 9001:2015 and ISO 45001:2018 conformance standards;
- ISNETWORLD Member Contractor for oil and gas environmental consulting; and
- Extremely low Total Recordable Incident Rate (TRIR) (rolling TRIR is 0.3) and Experience Modifier Rate (currently at 0.73).

CSA's corporate HSSE policy statement and HSSE Manual are available upon request.

6.0 Cost Estimate

Cost estimates are presented in **Table 2** for relocating the estimated 830 healthy and suitable corals (>10-cm diameter) falling within the zone of direct impact, including the wharf face and area immediately adjacent to the base. This includes project management, plans, mobilization, travel, coral removal, coral transfer to reattachment locations, coral reattachment, tagging and mapping of corals for monitoring, an immediate baseline health assessment, demobilization, a completion and baseline assessment report, and monitoring surveys and reports at 6-months, 18-months, and 36-months post coral relocation. The total estimated cost for the coral relocation and baseline monitoring survey and reports is $221,671. The estimated costs for three subsequent monitoring surveys and reports at 6-, 18- and 36-months post relocation total $145,309. To decrease the travel and labor costs associated with each of the three post-

relocation monitoring surveys CSA replaced one of the three scientific divers with a local commercial diver (meeting CSA's training and safety requirements) to serve as a standby diver during post-relocation monitoring activities. It is understood that this local diver would be contracted by and all expenses covered by either WSP or the Port of Guam.

Table 2. Cost estimate for the relocation and subsequent monitoring of corals within the zone of direct impact.

Project Task	Quantity	Total
Project Management and Plans, Document Review	1	$15,174
Mobilization, travel, demobilization	1	$51,771
Coral relocation for Direct Impact Zone (830 Coral Colonies) and Baseline Monitoring (including weather contingency)	1	$131,575
Completion Report and Baseline Monitoring Report Preparation and Submittal	1	$23,151
Total Cost Estimate for Relocating Approximately 830 Corals Within Zone of Direct Impact Plus Completion and Baseline Reporting		**$221,671**
6-month Monitoring Survey & Report (exclusive of local standby diver)	1	$47,789
18-month Monitoring Survey & Report (exclusive of local standby diver)	1	$48,432
36-month Monitoring Survey & Report (exclusive of local standby diver)	1	$49,088

7.0 PROPOSAL TERMS

CSA Ocean Sciences Inc.'s (CSA) commercial proposal price calculations were based upon its "General Terms" as well as "Project-Specific Terms," which are outlined below. If WSP USA, Inc. (Client) has issues with any of these items, CSA reserves the right to modify its original proposal price in order to meet any cost increase arising from any modifications requested by the Client.
This proposal contains privileged, confidential, and/or proprietary information intended for a specific individual and purpose. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful.

General Terms

- CSA is TRACE certified and conducts business in strict accordance with TRACE anti-bribery, corruption, and third-party risk management guidelines (https://www.traceinternational.org/).
- CSA will endeavor to perform the Services and accomplish the objectives within the estimated costs and schedule, but in no event shall CSA's estimate be interpreted as a not-to-exceed or fixed price unless expressly stated otherwise.
- Quoted rates are valid for 180 days after date of proposal.
- Any presentations to and meetings will be conducted remotely and electronically; any in-person meetings will be attended at additional expense to the Client.
- A mutually agreed upon contract must be executed by both parties before any commencement of work, unless CSA receives a formal "Notice to Proceed." Upon request, CSA can provide a "Notice to Proceed" template.

- Once CSA receives a formal "Notice to Proceed," a mobilization time of up to 2 weeks will be required.
- Payment is due within 30 days of invoice unless otherwise stated in contract.
- Mobilization services are due and payable in advance.
- Any costs for third-party services or supplies not specifically included will be billed at cost +15%.
- CSA will utilize WGS 84 UTM geodesy and Esri data formats in all geospatial products unless otherwise specified at project outset by the Client;

Permits

- Price does not include acquiring any permits or fees by CSA or its subcontractors. All necessary permits and fees are to have been secured and paid by the Client prior to project initiation.

Delays

- The CSA Team will not be held responsible for any costs or delays incurred due to Government actions, decisions, or rulings when all necessary measures to address all transparent Government concerns have been taken.
- The cost estimate is based upon CSA staff having continuous access to the site during coral relocation operations.
- The initial CSA in-water coral relocation operations are estimated at up to 2 weeks.

Reporting

- Price for preparing deliverables is based on a single draft and final document addressing a single set of Client comments for each deliverable.
- All deliverables will be provided electronically; costs for preparation of hard copies is not included.

Coral

- Impact and relocation sites have been previously identified and determined to be within the tolerance ranges of coral species.
- In the event that the previously selected relocation sites are found to be unsuitable and a survey of additional sites is required, this service will be provided at additional cost.
- Given documented increasing heat-induced coral mortality and declines in live coral cover in Guam since 2013 (Raymundo et al., 2019[2]), CSA cannot guarantee the long-term survival of the relocated corals.

[2]Raymundo, L.J., D. Burdick, W.C. Hoot, R.M. Miller, V. Brown, T. Reynolds, J. Gault, K. Idechong, J. Fifer, and A. Williams. 2019. Successive bleaching events cause mass coral mortality in Guam, Micronesia. Coral Reefs 38:677-700.

Attachment

2. Revised Compensatory Mitigation Plan for the Hotel Wharf and Access Road Maintenance and Repair Project Apra Harbor, Guam, Revised December 2019

REVISED COMPENSATORY MITIGATION PLAN FOR THE HOTEL WHARF AND ACCESS ROAD MAINTENANCE AND REPAIR PROJECT APRA HARBOR, GUAM

Prepared for:

Port Authority of Guam
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Revised December 2019

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1 INTRODUCTION

The maintenance and repair activities at Hotel Wharf involve construction of a new sheet pile bulkhead retaining wall at an approximately 6.25 ft. to 9.75 ft. offset from the existing sheet pile bulkhead wall, and installation of utilities, and paving and installation of utilities along approximately one mile of adjacent access roadway along Apra Harbor on Cabras Island, Guam. No dredging is proposed as part of the project activities.

Hotel Wharf consists of an aging seawall structure with concrete decking and an asphalt center section. In past years, the PAG leased the facility for various commercial activities including cruise ship operations, administrative functions, fishing support operations, and recreational activities. It has also been used directly by the PAG for scrap metal handling, and vehicle import operations when space at the Jose D. Leon Guerrero Commercial Port of Guam (Commercial Port) facility was temporarily restricted.

Hotel Wharf has recently transitioned from being a leased facility to one that will be used directly by the PAG. The PAG anticipates that future construction in the Commercial Cargo Terminal will create an increased need for overflow and contingency operations at Hotel Wharf during Commercial Port reconfiguration and a potential increase in cargo flow as a result of the impending military buildup. Consequently, maintenance and repair of Hotel Wharf is now a high priority project for the PAG.

Currently, the wharf is not in use as the facility is structurally unsound. The purpose of the proposed project is to restore valuable PAG property to safe and efficient operational status. The project is needed to maintain and repair the existing Hotel Wharf and adjacent roadway to support overflow and emergency "break bulk" and "bulk" cargo handling operations, potential military mobilization, and cruise vessel mooring and passenger screening operations.

1.1 Objectives of Mitigation Plan

The overall objective of this plan is to mitigate for the loss of ecological functions and services resulting from the direct impacts to coral reef habitat from the proposed construction activities in waters of the U.S., in accordance with the U.S. Army Corps of Engineers mitigation policies as well as the Memorandum of Agreement between the U.S. Environmental Protection Agency and the Department of the Army (U.S. Clean Water Act Section 404).

1.2 Description of Proposed Action

In-water construction activities will begin with installation of the turbidity curtain, continue with existing debris removal, then driving of sheet piles, backfill, and capping. Fill material placed between the existing bulkhead and the new sheet pile wall will be contained, and will not be in contact with open water, thereby minimizing impacts to water quality. This sequence of construction activities will minimize ecological disturbance by preventing the level of disturbance and cleanup that would be associated with removing existing piles first.

Storm water quality will be improved with implementation of the proposed project, as surface runoff will be treated by oily water separators and a filtration system or a drainage ditch before entering Apra Harbor. No new riprap will be installed in waters of Apra Harbor during installation of the five new storm water outfalls along the roadway. Overall, the project will improve water quality in the area due to implementation of storm water collection and treatment facilities that do not currently exist.

1.3 Description of Impacts

In-water activities will be limited to pile driving and backfill between the proposed sheet piles and existing wharf face, which will result in permanent impacts to 4,577 sq. ft (0.11 acres) of navigable waters (Figure 2). No dredging is proposed as part of the project.

- Direct but temporary impacts.
  There is the possibility that divers would make inadvertent contact with the seabed during construction (e.g., during installation of anchors for turbidity curtains). All divers working in the marine environment would be briefed on the presence of fragile coral colonies and best management practices on how to avoid impacts to marine resources. During construction, divers may stage materials on the seabed such as anchors for the turbidity curtain or materials for debris removal. Staging will be conducted in such a way that no corals are impacted by manually placing the materials on areas where no live corals exist.

- Direct and permanent impacts.
  The total footprint for all in-water improvements is approximately 4,577 sq. ft. (0.11 acre). Additionally, the entire wharf face will be covered and backfilled, resulting in an impact to approximately 15,015.6 sq. ft. (1,395 sq. m.) of vertical area.

- Indirect and short-term impacts.
  A full-depth turbidity curtain will be installed prior to the start of construction and will encompass an area of approximately 43,367.8 sq. ft. (4,029 sq. m.) (Figure 2). Turbidity generated by the pile driving will be trapped within the limits of the turbidity curtain and have the potential to adversely affect any resident corals within this area. The turbidity curtain will remain in place for the duration of the project, which is anticipated to last approximately 2 months.

1.4 Avoidance and Minimization Measures

The project incorporates the following measures to avoid or minimize impacts to waters of the U.S. and coral reef resources.

1. Conspicuous mobile invertebrates, such as sea cucumbers and sea stars, would be manually relocated out of the direct impact zone prior to the commencement of all activities.
2. Turbidity curtains will be utilized during the installation and construction of all marine structures in order to minimize local increases in turbidity.
3. Turbidity curtains will be installed no closer than 10 ft. from the identified aggregate reef, as shown in Figure 2.
4. Best Management Practices (BMPs) will include silt fencing in uplands to confine work for the road and storm water drainage improvements.
5. All equipment and materials for turbidity curtain installation, e.g., anchors, would be manually staged in the marine environment in areas where no live coral exist.
6. All divers and personnel working in the marine environment would be briefed on the presence of coral resources, as well as the possibility of marine mammals and sea turtles.

1.5 Description of Impact Area

Guam is an unincorporated U.S. territory and the largest and southernmost island in the Mariana Islands archipelago. The project site is located within Lots LPCL-3-REM and LPCL-2 on the Apra Harbor side of the Glass Breakwater, Municipality of Piti (Figure 1). The project site is within the Apra watershed, a 13.1 square mile area that encompasses Apra Harbor and the Aguada, Atantano, Laguas, and Sasa Rivers. The receiving surface water body for the project is Apra Harbor. Guam EPA classifies Apra Harbor as "Good" (M-2 category) quality marine water offshore from Hotel Wharf and the outer Glass Breakwater, and "Fair" (M–2 category) quality marine water offshore from Cementon and the area leading east towards Commercial Port (Guam EPA, 2017). The Guam Power Authority Power Plant and nearby Commercial Port are industrial uses to the east of Hotel Wharf. Fishermen frequent the roadway to the east and west of the project site. Outhouse Beach, located east of Hotel Wharf, is a popular scuba diving site accommodating dozens of divers per day. Jet skiing and flyboarding activities occur within the small embayment immediately to the west of Hotel Wharf and bounded by Dog Leg Pier.

1.5.1 Endangered Species

Table 1 lists the U.S. Endangered Species Act (ESA)-listed species under the jurisdiction of the National Marine Fisheries Service (NMFS) that are known to occur, or could reasonably be expected to occur, in the action area, and may be affected by the proposed activities. These include the Central North Pacific distinct population segment (DPS) of the green sea turtle and the Indo-West Pacific scalloped hammerhead shark DPS.

Table 1. ESA-Listed Species that are known to occur or may occur in the action area

Common Name	Scientific Name	ESA Status
Green Sea Turtle Central North Pacific DPS	*Chelonia mydas*	Endangered
Hawksbill Sea Turtle	*Eretmochelys imbricata*	Endangered
Indo-West Pacific Scalloped hammerhead shark DPS	*Sphyrna lewini*	Threatened

The only ESA-listed species under U.S. Fish and Wildlife Service (USFWS) jurisdiction that may occur in the action area are the green sea turtle and hawksbill sea turtle. A sea turtle nesting beach is located approximately 900 meters east of Hotel Wharf, and will not be disturbed by the proposed action.

Effective November 13, 2014, 15 Indo-Pacific coral species were listed as threatened under the ESA (79 FR 53851). Three of these listed corals occur within Guam's waters: *Acropora globiceps*, *Acropora retusa*, and *Seriatopora aculeata*. None of these ESA-listed species (i.e., corals, turtles or shark), or any other listed species, were observed in the Direct or Indirect Impacts Zones during supplemental marine biological surveys in January and February 2019 (Burdick, 2019).

Based on an analysis of the proposed action and minimization of impacts provided by the proposed implementation of best management practices (BMPs), the PAG determined that the proposed action is not likely to adversely affect the ESA-listed species under NMFS jurisdiction (Table 1). On March 12, 2019, NMFS concurred with this determination of effect and concluded informal consultation for the proposed action under Section 7 of the U.S. Endangered Species Act. Similarly, PAG determined through an analysis of the proposed action and BMPs, that the proposed action may affect but is not likely to adversely affect ESA-listed species under USFWS jurisdiction. On April 12, 2019, USFWS concurred with this determination of effect and concluded informal consultation for the proposed action under Section 7 of ESA.

1.5.2 EFH and MUS

On Guam, EFH is defined as the marine water column from the surface to a depth of 1,000 m from shoreline to the outer boundary of the Economic Exclusion Zone (EEZ) (5,150 kilometers/200 nautical miles/230 miles), and the seafloor from the shoreline out to a depth of 700 m around the island. This EFH designation includes the water column and seafloor of Apra Harbor where the Hotel Wharf project is proposed, and its surrounding waters and submerged lands that support various life stages for the Management Unit Species (MUS) identified under the Western Pacific Regional Fishery Management (WPRFM) Council's Pelagic and Mariana Archipelago Fishery Ecosystem Plans (FEP) (2009a and 2009b). EHF for these waters has been designated for MUS and life stages (eggs, larvae and juveniles) of Coral Reef Ecosystem MUS (CRE-MUS), Bottomfish MUS (BMUS), Crustacean MUS (CMUS), and Pelagic MUS (PMUS).

2 MITIGATION GOALS AND OBJECTIVES

This mitigation plan is prepared to present measures to minimize or offset adverse effects to EFH (i.e., benthic/bottom habitat and substrate) and MUS resources (i.e., coral colonies/coral reefs that are CRE-MUS) and their ecosystem function due to the proposed activities.

2.1 Summary of Mitigation and Minimization Measures

The minimization and mitigation measures for this project are summarized below:

Table 2. Summary of Mitigation and Minimization Measures

Minimization / Mitigation Measure	Goal and Objective
Pre-construction coral relocation	Minimization of impacts to CRE-MUS by removal of corals from direct impact zone
Debris removal	Restoration of soft-bottom substrate, reduction of physical stressors to EFH by removal of potential threats to corals from debris damage
Public education and outreach	Reduction of physical stressors to EFH from human sources of damage during recreational activities
Water quality improvements through stormwater management	Reduction of irradiance (turbidity) and pollutant stressors by collecting and pre-treating storm water runoff before it enters Apra Harbor

2.1.1 Pre-construction Coral Relocation

Prior to construction, corals identified as feasible for relocation will be moved from Hotel Wharf to a suitable relocation site nearby. Due to the scale of the relocation effort and several factors that might make relocation of certain coral species infeasible, some coral resources will be left in place and ultimately destroyed during construction.

2.1.2 Debris Removal

A large amount of debris is currently occupying a significant portion of the predominantly softbottom (sandy) substrate surrounding Hotel Wharf. Prior to the commencement of construction and only once the turbidity curtains are correctly installed, the contractor will likely use a crane to remove debris from the marine environment. This activity will be conducted only within the turbidity curtains in order to reduce the likelihood of sediment leaving the project area.

2.1.3 Public Education and Outreach

The tourism industry on Guam accounts for up to 60% of the Government of Guam's annual revenues (GVB, 2014), and continues to grow, with over 1.5 million visitors in 2016, and visitor spending reaching $1.75 billion, supporting nearly 21,100 jobs (34% of total employment on Guam) with an associated tourism labor income of $617 million (GVB, 2018). The island's marine resources, including coral reefs, play an important role in attracting these tourists to Guam; however, physical damage can occur when these users of the marine resources are not aware of potential impacts from their activities. These activities may include touching or walking on coral, resulting in abrasion or actual fracturing of corals.

Marine resources within the Port are managed under the Department of Parks and Recreation (DPR) Recreational Water Use Management Plan (RWUMP). Under this plan, the Port allows commercial vendors the use of designated areas for commercial activities. Outhouse Beach (also known as Divers Beach), located approximately 1,115 ft east of Hotel Wharf, is frequently used for introductory scuba diving instruction because of the easy entry from shore and accessibility to deeper water. Dog Leg Pier, located west of Hotel Wharf, is also used regularly for commercial recreational activities.

In July 2019, the PAG surveyed all commercial vendors that have been issued commercial permits by the PAG to use their facilities (i.e., Outhouse Beach and Dog Leg Pier) in order to obtain credible user data for each site. Each vendor was asked to calculate and provide the maximum, minimum, and average number of scuba dives, snorkels, and other marine sports conducted on a weekly basis. Using this data, the expected annual number of divers was calculated for each site (Table 3).

Table 3. Estimated coral impacts in Apra Harbor and expected reduction in impacts after implementation of the Public Outreach and Education Program.

Row	Field	Value	Data Source
1	Number of Corals Damaged Per Diver Per 60-min Dive	1.7 ± 4.9	Zakai and Chadwick-Furman, 2002
2	Expected Annual Number of Divers using PAG Facilities	25,000	PAG Vendor Surveys, 2019
3	Expected Reduction in Diver Impacts after Briefing	50%	A. Williams, 2019
4	Estimated Annual Total No. of Diver-Damaged Corals at Outhouse Beach and Dog Leg Pier	42,500	Row 1 × Row 2
5	Expected Annual Reduction in Total Number of Diver-Damaged Corals after Diver Briefing	**21,250**	Row 4 - Row 3

According to the user survey data, approximately 25,000 dives are expected to be conducted each year by PAG commercial vendors within Dog Leg Pier and Outhouse Beach. This is a low-end estimate based on vendor survey data, and only takes scuba diving into account. Estimates would likely be higher if impacts from snorkelers, jet ski, underwater scooters, and other marine sports were included; however, no scientific

sources could be found pertaining to these other types of activities and their impacts to coral.

Zakai and Chadwick-Furman (2002) found that divers in groups will damage an average of 1.7 ± 4.9 corals per 60-minute dive. The amount and extent of direct, diver-related damage to corals is dependent on the number of divers using the area, the type of corals, and the divers' experience level. The PAG commercial vendors using Dog Leg Pier reported that 50%-80% of their diving customers do not possess a scuba diving certification, 0% to 30% have "Open Water" certification, 0% to 20% have "Advanced Open Water" certification, 0% to 10% have "Rescue Diver" or higher certifications. The divers that use Dog Leg Pier are predominantly beginners with little to no diving experience; hence, they would have a relatively high probability of damaging corals.

Due to the number of relatively inexperienced divers and the daily use of these PAG sites, it is expected that the corals are often adversely impacted by divers. There is currently no public education and outreach program within PAG's commercial permit system to engage the many users of the Port's recreational resources at any permitted site, including Outhouse Beach and Dog Leg Pier.

PAG proposes to establish an education and outreach program to offset impacts to EFH affected by physical damage, irradiance, and sedimentation from the Hotel Wharf proposed action. The PAG Public Outreach and Education Program would offset impacts to a total of 10,337 coral colonies, i.e., the unavoidable loss of 5,698 corals in the Direct Impacts Zone, and the temporary sedimentation impacts to 4,639 corals within or near the turbidity curtain in the 20 m Indirect Impacts Zone. The implementation of the program is expected to result in an annual reduction of 21,250 diver-damaged corals (Table 3), or an offset/impact ratio of approximately 2:1.

The program would educate all vendors at the Dive Instructor/Dive Guide or operations manager level prior to leading their patrons on dives. These instructors and guides would, in turn, be responsible for informing their patrons of the best management practices while using the marine resources at the Port. This program would certify all vendors, regardless of where their activity occurs; therefore, it would reach vendors at Outhouse Beach and Dog Leg Pier.

On-going graduate research conducted on Guam by Ashton Williams indicates that accidental and intentional contacts with live coral could be reduced by over 50% by implementing a short, one-sentence briefing on diver-related coral damage (Pers. comm. Williams, A., 2019). A similar coral briefing will be utilized by the Public Outreach and Education Program, and similar results would be expected.

The Port would also erect signs at Outhouse Beach and Dog Leg Pier with information on how the public can minimize impacts on marine resources while engaged in recreational activities.

2.1.4 Maximizing Water Quality Improvements through Storm Water Management

In order to offset the adverse impacts to EFH resulting from the increased turbidity within the Indirect Impact Zone, the Port's consulting engineering designers increased the storm water management and treatment measures to the maximum extent practicable. Currently, there are no storm water control measures present along the Glass Breakwater Access Road and as a result, storm water enters Apra Harbor untreated and adversely affects local water quality.

Five storm water outfalls are proposed along the access road, including outfall S-105, which will be constructed to the west of Outhouse Beach (Appendix A, Figure 2). There is approximately 75 ft of concrete ditch adjacent to each road outfall, with grass-lined bioswales proposed for long stretches along the north side of the road in between these locations. At outfall S-105, the bioswale east of the concrete V-ditch is over 300 ft long. Storm water that exits these outfalls will first be pre-treated by passing through a grass-lined bioswale, then a concrete V-ditch, and then a catch basin fitted with a sump and hood. Bioswales are a type of open channel, which are capable of removing a median value of 81% of total suspended solids (TSS), 34% of total phosphorous, 84% of total nitrogen, 70% of metals, and 62% of hydrocarbons, per the *CNMI and Guam Stormwater Management Manual* (Horsley Witten Group, Inc. 2006). The existing water quality within Apra Harbor, including Outhouse Beach, is anticipated to improve as a result of the proposed storm water management improvements.

2.2 Functions to be Lost at Impact Area

The proposed Hotel Wharf Repair Project is anticipated to result in the loss of ecological functions and services associated with coral reef habitat from the following impacts:

- Direct long-term physical impacts and temporary to short-term physical impacts and water quality impairments, including an increase in turbidity and sedimentation, during the project.

- Adverse effects to EFH and MUS because there will likely be permanent loss, or long-term damage to, coral colonies/coral reef living on the wharf face and surrounding substrate in the project area.

These impacts would result in a loss of reef structure, which provides physical protection of the shoreline against storm surge, and refugia and habitat for resident and transient MUS and their prey. The impacts would also result in loss of CRE-MUS, including filter feeding organisms such as sponges, which would impact ecosystem functions by a reduction in nutrient uptake and recycling.

2.3 Functions to be Gained at Mitigation Area or by Mitigation Action

The main goal of this mitigation plan is to compensate for the loss of ecological functions and services on the face of Hotel Wharf and of a total of 0.11 acres (4,577 sq. ft.) of shallow hard and softbottom within the Direct Impacts Zone (approximately 6.25 to 9.75 ft from the existing Hotel Wharf face). The coral cover over these areas ranges from 0.3% to 1% (Burdick, 2019).

Coral Relocation. The relocation of reef-building hard coral colonies to the mitigation area would increase the amount of EFH and habitat for CRE-MUS at that site. There would be a gain of ecological functions and corresponding goods and services derived from this increase in habitat. Generally, as associated with coral reefs, these are anticipated to include a gain in structure and shelter or habitat for organisms (which provide refugia for fish and other marine organisms); increased uptake and recycling of nutrients (which provide treatment of waste products); and additional reef structure (which provide for coastal stabilization against the effects of storm surge).

Debris Removal. The removal of debris from the seafloor near the base of Hotel Wharf would restore and increase soft-bottom habitat to this heavily impacted area. The debris poses a potential hazard as a physical damage stressor, particularly during storm events when debris may shift and abrade or break reef structure. As a specific function or service, the removal of marine debris would protect sessile biological components of coral reef habitat from damage by moving debris that could migrate with storm and wave action into unimpacted areas, reduce stress on the existing coral community, and restore substrate for MUS (USCRTF 2016).

Public Education and Outreach. The implementation of a public education and outreach program is intended to raise consciousness and conscientiousness in recreational users. If effective, this change in perception and behavior would, in turn, reduce physical damage stressors on the commercial recreational areas within the Port's inventory. These recreational areas include Outhouse Beach, which is frequented by a high volume (over 100 per day) of novice divers, many with poor buoyancy control and little environmental awareness. The hardbottom area impacted by these activities at Outhouse Beach is estimated at 79,702 sq. ft (7,404 sq. m) (Figure 4). The reduction of physical damage to coral reef at all commercially-permitted areas, including Outhouse Beach, would protect reef-building coral colonies, and potentially allow for their recovery. There would be a gain of ecological functions and corresponding goods and services derived from protection and recovery of this habitat. Generally, as associated with coral reefs, these are anticipated to include a gain in structure and shelter or habitat for organisms; increased uptake and recycling of nutrients; and additional reef structure.

Maximizing Water Quality Improvements through Storm Water Management. The proposed construction of storm water infrastructure at selected locations throughout the action area would result in a marked improvement in the quality of the Apra Harbor

receiving waters, especially since there is currently no existing storm water infrastructure in place. The collection and pre-treatment of storm water runoff prior to discharge would remove pollutant stressors, including sediment, nutrients (phosphorous and nitrogen), metals, and hydrocarbons. The removal of sediment through pre-treatment would also reduce turbidity, which is an irradiance stressor. There would be a gain in water quality, and reduction in shading, which would improve the habitat for organisms that use benthic and water column components of EFH, and potentially allow for recovery of this habitat with an associated increase in benthic and pelagic organisms.

2.4 Location

The Hotel Wharf project site impact and mitigation areas are shown on Figure 3.

2.5 Methods for Quantifying Aquatic Resources

Coral colony, benthic cover, and macroinvertebrate surveys occurred along transects placed on the three wharf sides, the seafloor at the base of the wharf, and the area of seafloor extending 30 m from the wharf sides in January and February 2019 (Burdick, 2019). Additional transects were placed along a relatively large area of aggregate reef and mixed sand/hardbottom that runs roughly parallel to, and approximately 25 m from, the south wharf face. Transects were not used for the small (< 5 m in longest dimension) patch reefs occurring within the survey area; instead, all corals and large mobile macroinvertebrates were censused, and benthic cover was measured, for the whole patch reef (Burdick, 2019).

The survey results included the Direct Impacts Zone, which includes the existing sheetpile wharf face and area of seafloor extending 2.4 m (8 ft), 1.9 m (6 ft) and 3 m (9.75 ft) from the base of the west, south and east wharf sides, respectively. The expansion of Hotel Wharf will directly impact this seafloor area, which comprises approximately 4,577 sq. ft. (0.11 acre) of predominantly sandy substrate. The Indirect Impacts Zone extended from the wharf face to the inner face of the proposed turbidity curtain. This was originally proposed as 30 m from the wharf face, and later revised to 20 m from the wharf face.

All coral colonies occurring within a one-meter-wide belt centered on the transect tape were identified and sized (longest dimension to nearest cm) along all wharf sides and all seafloor transects except the two additional transects later surveyed on the reef flat adjacent to the wharf. All coral colonies occurring on small (< 5 m in longest dimension) patch reefs located within 50 m of the wharf face were censused. Colony density estimates for the shallow (1 m) wharf face transects were calculated using area values that accounted for the additional survey area added to the width of the shallow transects on the wharf face and sides by the concrete beam that extended 30 cm from the wharf.

Benthic cover estimates were derived from the point-count analysis of photographic images captured along a series of 50 meter transects. After a length of transect tape was

placed by one diver, another diver obtained an image every one meter along the left side of the tape using a compact point-and-shoot camera placed atop a PVC monopod. Images were imported from the Secure Digital (SD) card into Adobe Lightroom software and a batch white balance adjustment was applied to groups of images with similar white balance characteristics. Benthic cover estimates were generated through an analysis of the photo transect images using Coral Point Count with Excel Extension (CPCe) application. Corals were identified to species when possible, although some taxa often could not be identified to species level using the photo transect images.

All mobile macroinvertebrates were identified and counted within two-meter-wide belt transects centered on the transect tape for all transects. Patch reefs were also censused for mobile macroinvertebrates. As with the coral belt transect surveys, the macroinvertebrate belt transect area—and thus, the macroinvertebrate density calculations—accounted for the additional area added to the width added to shallow wharf face transects by the concrete beam.

2.6 Existing hydrology

The project site is in the Apra watershed, which encompasses portions of Yona, Santa Rita and Piti municipalities, and drains east into Apra Harbor and the Philippine Sea (Kottermair, 2012). There are no freshwater streams in the vicinity of the project area. The nearest river is the Sasa River, which empties into Sasa Bay approximately 3.5 km southeast of Hotel Wharf.

Hotel Wharf occurs within the Zone II designated by Paulay et al. (1997), which corresponds to the original backreef of Luminao Reef. The wharf interrupts a shallow (approximately 1.5 m deep) reef flat that extends from the western side of Cabras Island in the east to the western edge of the Luminao barrier reef in the west. The area of reef flat immediately to the west of Hotel Wharf extends approximately 80 m from the shore, which is comprised a mix of riprap and naturally-accumulated sand, to the southern edge of the flat. The reef flat to the east of the wharf extends approximately 15 m from riprap to the southern edge of the flat. The reef flat adjacent to both sides of the wharf both abruptly drop 2–3 m to a sandy slope. The sandy slope extends southward, dropping more steeply from the edge of the reef flat to an area approximately in line with the southern wharf face, then sloping gradually across a distance of about 70 m before sloping more steeply to the lagoon bottom.

The average tide level ranges from 1.3 ft. during neap tides and 2.1 ft. during spring tides. Edward K. Noda and Associates, Inc. (1990) calculated storm tidal ranges for the west coast of Guam to be 23.6 ft. high with period of 16 seconds (5-year significant wave) and 46.5 ft. high with period of 22 seconds (100-year significant wave).

2.7 Existing benthic cover

The existing benthic cover was previously mapped as pavement with predominately coral cover (10%-<50%) near the wharf (reef flat and portion of sand flat at the base of the wharf), transitioning to uncolonized sand (90%-100%) away from the wharf (Burdick, 2005). Table 3 provides recent benthic cover of the seafloor around Hotel Wharf (Burdick, 2019).

Table 4. Benthic Cover of the Seafloor around Hotel Wharf, within the Direct Impacts Zone

Cover type	Percent Cover			
	South	East	West	Entire base
Hard coral	0.5 ± 0.2	0.3 ± -	1.0 ± -	0.6 ± 0.3
Soft coral	0.0 ± 0.0	0.0 ± -	0.0 ± -	0.0 ± 0.0
Sponge	0.3 ± 0.3	0.0 ± -	0.0 ± -	0.2 ± 0.3
Dead coral	0.0 ± 0.0	0.0 ± -	0.0 ± -	0.0 ± 0.0
Other hardbottom	1.7 ± 1.6	72.4 ± -	65.5 ± -	28.6 ± 37.0
Sand	39.4 ± 27.2	25.6 ± -	30.5 ± -	34.8 ± 20.3
Debris	58.2 ± 28.8	1.7 ± -	3.0 ± -	35.8 ± 36.7

Burdick, 2019

The 2019 marine survey recorded a total of 2,739 individual coral colonies, comprising 43 taxa within the Direct Impacts Zone. Total mean colony diameter for all coral colonies observed was 4.8 ±6.2cm. Based on the colony density values derived from the count values obtained for the belt transect surveys and the area of substrate, it is estimated that 6,528 coral colonies occur within the Direct Impacts Zone (Burdick, 2019).

The dominant benthic cover type on the wharf face was a mixed assemblage comprising erect and adherent macrophytes, classified as "Other Hardbottom" in Table 5. Sponge cover was relatively low, ranging from 0% to 2.6%.

Table 5. Percent Cover of major benthic classes for the wharf face.

Cover type	Percent Cover			
	South	East	West	Entire base
Hard coral	0.6 ± 0.4	0.5 ± 0.7	2.3 ± 1.0	0.9 ± 0.8
Soft coral	0.1 ± 0.1	0.4 ± 0.6	0.0 ± 0.0	0.1 ± 0.3
Sponge	2.6 ± 2.3	2.2 ± 3.2	0.0 ± 0.0	2.1 ± 2.3
Dead coral	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Other hardbottom	96.5 ± 2.1	96.8 ± 3.1	97.7 ± 1.0	96.7 ± 2.0
Sand	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Debris	0.2 ± 0.7	0.0 ± 0.0	0.0 ± 0.0	0.2 ± 0.6

Burdick, 2019

A total of 1283 coral colonies were observed within the Indirect Impacts Zone, comprising 39 coral taxa. Based on the colony density values derived from the count values obtained for the belt transect surveys, it is estimated that 7,794 coral colonies occur within the 30m Indirect Impacts Zone. It is estimated that 4,639 of those colonies occur within 20m of the wharf face.

Table 6. Benthic Cover within the 20 m Indirect Impacts Zone.

Gover Type	Percent Gover	
	Reef Flat	Sand Flat
Hard Coral	3.4 ± 4.2	0.0 ± 0.0
Soft Coral	0.0 ± 0.0	0.0 ± 0.0
Sponge	0.1 ± 0.2	0.2 ± 0.3
Other Hardbottom	90.5 ± 6.0	9.1 ± 9.7
Sand	5.3 ± 6.9	72.7 ± 12.3
Debris	0.6 ± 0.9	18.1 ± 12.3

Burdick, 2019

Table 7. Benthic Cover within the 30 m Indirect Impacts Zone.

Cover type	Percent Cover			
	Reef Flat	Sand Flat	Agg. Reef	Mixed Sand/HB
Hard coral	2.8 ± 2.6	1.2 ± 1.8	14.8 ± 2.5	2.6 ± 1.3
Sponge	0.1 ± 0.1	0.3 ± 0.3	0.8 ± 0.8	0.9 ± 0.7
Other hardbottom	85.4 ± 12.2	15.4 ± 13.2	44.8 ± 11.8	31.5 ± 5.6
Sand	11.3 ± 13.6	70.6 ± 13.9	38.8 ± 9.5	62 ± 3.7
Debris	0.4 ± 0.6	12.5 ± 10.4	0.9 ± 0.7	3 ± 4

Burdick, 2019

2.8 Existing substrate

The existing substrate surrounding Hotel Wharf can be categorized by 4 distinct zones: Reef Flat, Sand Flat, Aggregate Reef, and Mixed Sand/Hardbottom (Table 6 and Table 7). A significant amount of debris currently occupies portions of the seafloor, with concentrations being higher closer to the wharf (Table 6 and Table 7). The expansion of Hotel Wharf will impact approximately 4,577 sq. ft. (0.11 acre) of predominantly sandy substrate.

2.9 Existing wildlife usage

2.9.1 Fish

Myers and Donaldson (2003) estimated 1,019 shorefishes within the entire Mariana Archipelago, although the actual number for Guam may be smaller. A total of 60 species of fish were observed within the project area during marine surveys conducted by AMEC in 2014 (AMEC, 2014). The survey investigated three distinct habitat types: Reef Flat, Wharf Face and Base, and Channel (Sand Flat and Patch Reefs).

2.9.2 Mobile Macroinvertebrates

A total of 130 mobile macroinvertebrates comprising 14 species were observed within the Direct Impacts Zone. The most commonly observed macroinvertebrate taxa in the Direct Impacts Zone were *Diadema* sp., *Actinopyga echinites*, *Echinometra mathaei*, and *Culcita novaeguineae*, with *Diadema* sp., *A. echinites* and *C. novaeguineae* dominant on the wharf sides and *E. mathaei, A. echinites*, and *C.novaeguineae* dominant on the seafloor at the base of the wharf. The most abundant taxa in the Direct Impacts zone, the long-spined sea urchin (*Diadema* sp.), was almost exclusively observed in recesses in the underside of the shallow beam across the wharf sides.

2.10 Historic and Current Land Use

The existing H Wharf or Hotel Wharf is a 500-ft long waterfront structure originally constructed in 1948 by the U.S. military, and may have been renovated possibly in the 1950s. Hotel Wharf was used as the Navy's ammunition wharf during the Vietnam War (Moore and Hunter-Anderson, 2005), and brought in bombs for loading onto B-52 bombers leaving Guam's airfields (Blackford, 2007). Eventually, the location of the wharf hampered commercial development at the Port (where containerized cargo handling began in 1969), and the Navy's need to handle more ammunition ships was no longer met by the wharf's location and size (Blackford, 2007). The Navy's ammunition wharf was subsequently moved from H Wharf to Orote Peninsula (Moore and Hunter-Anderson, 2005), and the U.S. Navy transferred the wharf to the Port in 1989.

Over the years, PAG has leased the facility for various commercial activities including cruise ship operations, administrative functions, fishing support operations, and recreational activities. Hotel Wharf has recently transitioned from being a leased facility to one that will be used directly by the PAG and has been used directly by the PAG for scrap metal handling, and vehicle import operations when space at the Jose D. Leon Guerrero Commercial Port of Guam facility was temporarily restricted. The Port ceased active commercial operations on the wharf in 2001.

2.11 Current owners

Following its release from the Department of Interior in 1966, 62 acres of land, now known as Cabras Island, were transferred from the Department of Navy to the Government of Guam for development of the Commercial Port and industrial park. To date, over 1,000 acres of land, inclusive of Apra Harbor land, has been transferred from the federal government to the Government of Guam for the use of and control of the Port Authority. The Port Authority, through the Government of Guam, asserts authority and jurisdiction over the terrestrial and submerged lands of the project site. This includes the areas proposed for mitigation activities described in this plan, such as Outhouse Beach to the east of Hotel Wharf, and Dog Leg Pier located to the west of Hotel Wharf. The Port's authority and jurisdiction over these terrestrial and submerged lands is not anticipated to change in the foreseeable future.

3 MITIGATION SITE SELECTION AND JUSTIFICATION

3.1 Coral Relocation

3.1.1 Recipient Site Criteria

Coral colonies identified for relocation within the Direct Impacts Zone will be moved from Hotel Wharf and the surrounding substrate to a relocation site located at Dog Leg Pier, approximately 700 linear ft. (213 m) to the west of Hotel Wharf (Photo 1).

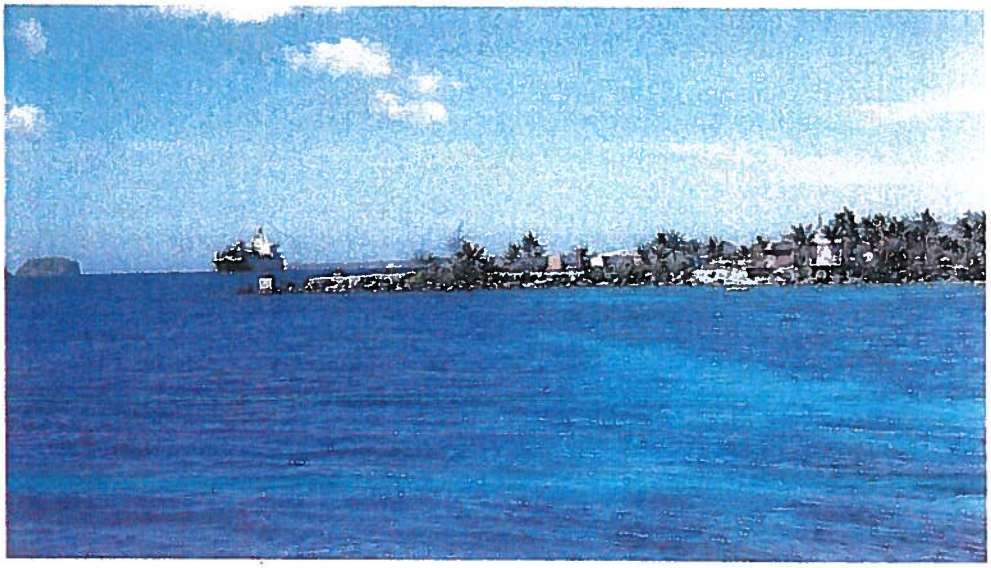

Photo 1. East pier of Dog Leg Pier, facing west, March 2019.

This relocation site was selected based on several key criteria, including: 1) close proximity to the project site; 2) presence of similar coral species and reef composition; 3) suitable hardbottom substrate devoid of coral on which to attach relocated colonies; 4) similar water depth and conditions; and 5) assurance from PAG that the relocation site would be protected through land use controls and committed to this use in perpetuity. While the recipient site is considered close, there is sufficient separation and protection from the impact site at Hotel Wharf through best management practices to minimize the potential for impacts during construction, such as sediment and vessel anchoring.

3.1.2 Qualitative Survey of Recipient Site

On March 9, 2019, David Burdick, the primary marine biologist conducting the marine survey for Hotel Wharf (Burdick 2019), and Devin Keogh, a biologist with Dueñas, Camacho, and Associates, Inc., carried out a scuba-assisted assessment of the reef in the vicinity of Dog Leg Pier, with the primary objective of determining if the area is suitable as a recipient site for coral colonies transplanted from the Hotel Wharf project area. The

reef area investigated occurs approximately 200 m to the west of Hotel Wharf and includes a shallow (< 1.5 m) 60 m-wide reef flat that occurs between the two "piers", and an approximately 200 m extent of lagoonal backreef slope that extends from the edge of the reef flat to a sand flat at a depth of approximately 10 m. The reef flat is primarily comprised of pavement and patches of aggregate reef with scattered corals, but transitions to primarily aggregate reef with dense coral growth closer to the edge of the reef slope (Photo 2).

Photo 2. Shallow reef between east and west piers at Dog Leg Pier. *Courtesy of D. Burdick.*

The 200 m extent of reef slope investigated stretches from an area approximately 40 m west of the west "pier" to an area approximately 20 m east of the east "pier." The benthic community along this portion of reef slope primarily comprises dense *Porites rus* growth, but patches of "bare" reef rock with low coral cover occur across the slope. While the area at the base of the slope primarily comprises sand, some patches of hardbottom with low-to-moderate coral cover were observed in the area just to the west of the west pier. The reef flat and slope extend approximately 400 m beyond the area investigated, to where the reef tract intersects with Dog Leg Reef, and 200 m to the east, where it meets Hotel Wharf.

Photo 3. Reef slope with dense *Porites rus* colonies (left) and patches of reef rock with low coral cover (right) at Dog Leg Pier. *Courtesy of D. Burdick.*

The overall structure of the natural reef area adjacent to Hotel Wharf is broadly similar to that of the reef area observed in the vicinity of Dog Leg Pier, with a shallow reef flat extending southward to a slope that terminates at a sand flat at approximately the same depth (10 m). Water conditions during the time spent at each site were similar; the close proximity of two reef areas suggests that water conditions and quality at both sites are similar year-round.

The composition of the coral community observed on the reef flat in both of these areas is generally similar. All species representing colonies suitable for transplantation that were recorded during surveys of the Hotel Wharf project area were observed on the reef flat between the piers at the Dog Leg Pier reef area. The area of available and suitable reef flat hardbottom appears sufficient for receiving corals transplanted from the reef flat adjacent to Hotel Wharf, as well as for receiving corals (primarily *Pocillopora damicornis* and massive *Porites* species) transplanted from the area on and above the shallow (~1.5 m) concrete beam extending across all sides of the wharf.

The slope along the Dog Leg Pier reef area hosts considerably greater coral growth and greater structural complexity in comparison to the slope of the natural reef adjacent to Hotel Wharf, although the eastern extent of the Dog Leg Pier reef slope appeared to be transitioning to the lower coral cover/lower structural complexity similar to the slope observed adjacent to Hotel Wharf. Despite these noted differences, coral community composition (if not relative abundance) along the slopes of both reef areas are similar.

The vertical habitat provided by the Hotel Wharf Face and the debris and unconsolidated sediment occurring at the base of the wharf is quite different from the natural reef slope it interrupts, as well as from the natural reef area investigated near Dog Leg Pier. However, species representing the vast majority of the colonies suitable for transplantation recorded from the Hotel Wharf face and the base of the south face (mainly massive *Porites* species and *P. rus*) were observed on the Dog Leg Pier reef slope. As mentioned above, while the reef slope near Dog Leg Pier largely comprises areas of dense *Porites rus* growth, numerous patches ranging in size from a few square meters to 10 or more square meters are scattered across the slope. While *Lobophyllia corymbosa* and *L. hemprichii* were recorded from both the Hotel Wharf site and observed at the Dog Leg Pier reef area, a third *Lobophyllia* species that appears closest to *L. hataii* was recorded from the Hotel Wharf face but was not observed at the Dog Leg Pier site. This species appears to prefer highly shaded environments, such as that offered by the Hotel Wharf face.

A limited area of near-vertical slope occurring just to the west of the west "pier" at the Dog Leg Pier site may offer a similar environment for some of the *Lobophyllia* cf. *hataii* colonies and colonies of other shade-tolerant taxa (e.g., *Leptoseris* spp.) to be transplanted from Hotel Wharf, but the technical challenges of affixing relatively fragile colonies to a vertical structure may prevent the transplantation of these colonies or may require their transplantation to environments with non-preferred light levels (Photo 4).

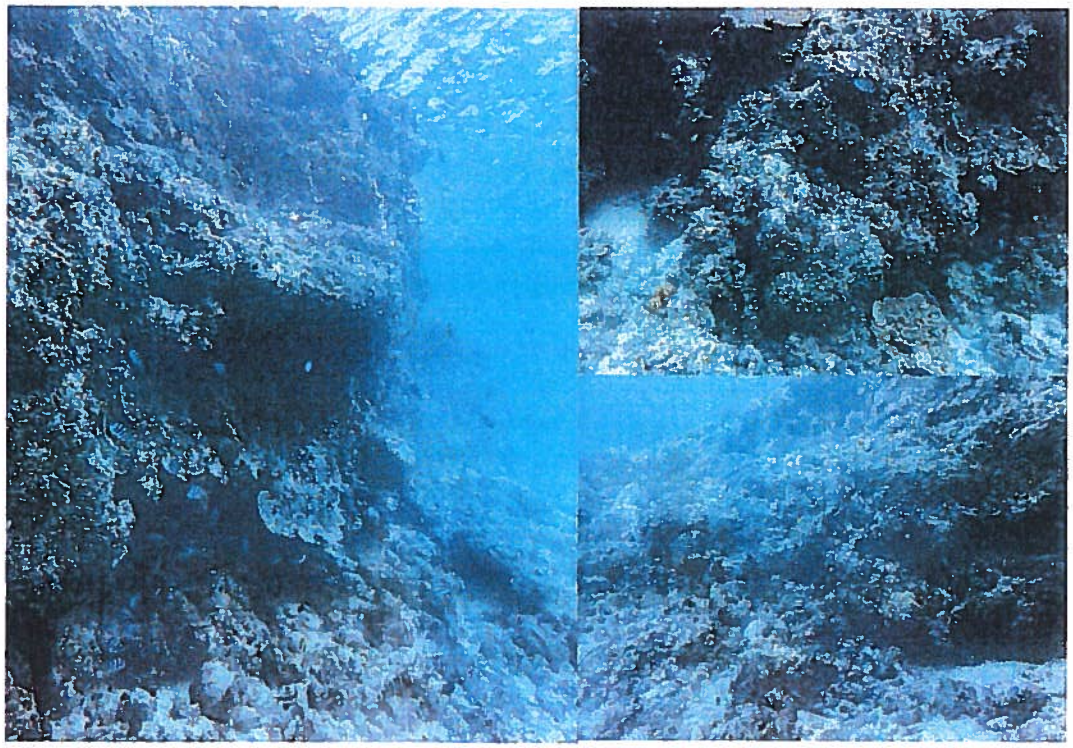

Photo 4. Near-vertical slope area west of west pier at Dog Leg Pier. *Courtesy of D. Burdick.*

The survey also considered potential areas for coral colonies that may be required to be transplanted from the debris and patches of hardbottom scattered across the sand flat within the Indirect Impacts Zone of the Hotel Wharf project site, although relocation of these colonies is not proposed by PAG at this time. If such an action is mandated, these colonies could be placed on hardbottom along the deeper portion of the reef slope at Dog Leg Pier (to better match light conditions) or along the patches of hardbottom extending southward from the base of the reef slope near the west "pier" (Photo 5).

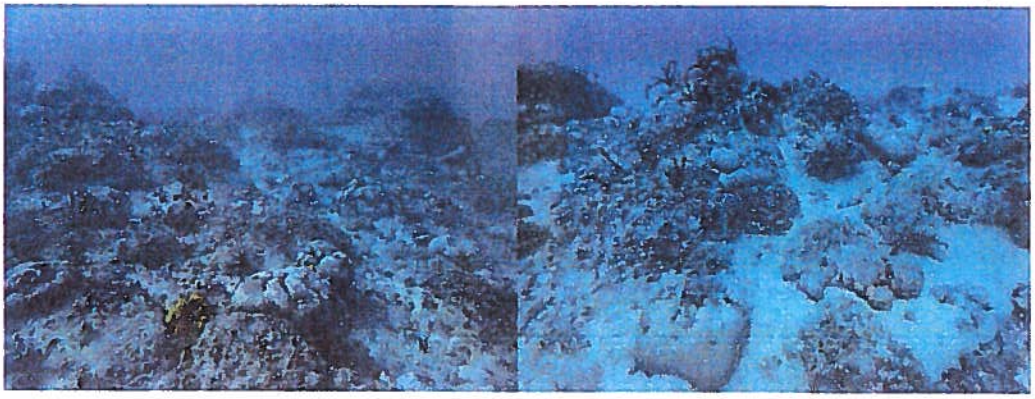

Photo 5. Sand and hardbottom along base of reef slope at Dog Leg Pier. *Courtesy of D. Burdick.*

The species representing the vast majority of colonies suitable for transplant that were recorded in the Hotel Wharf Indirect Impacts Zone, which include massive *Porites* species, *Porites rus*, *Pocillopora damicornis*, and several *Astreopora* species, were all observed at similar depths at the Dog Leg Pier site. While it is not clear if the area of available substrate at the investigated area of the Dog Leg Pier site will be sufficient if all coral colonies from the Hotel Wharf Indirect Impacts Zone must be transplanted, it is highly likely that a sufficient amount of additional available substrate can be found to the west and east of the area of reef investigated at Dog Leg Pier.

The final coral relocation sites within the vicinity of Dog Leg Pier will be selected once the work has started.

3.2 Debris Removal

Debris associated with past land use has accumulated around Hotel Wharf, particularly along the wharf base. Since debris will be removed from the seafloor surrounding Hotel Wharf, there are no alternative sites proposed or feasible for this mitigation measure.

The marine debris observed during marine surveys in January and February 2019 within the Direct and Indirect Impacts Zones comprised materials such as rope, pipe, metal fragments, tires, and various types of household waste including soda cans, bottles, and clothing (Personal observation, D. Keogh, DCA) (Photos 6 and 7).

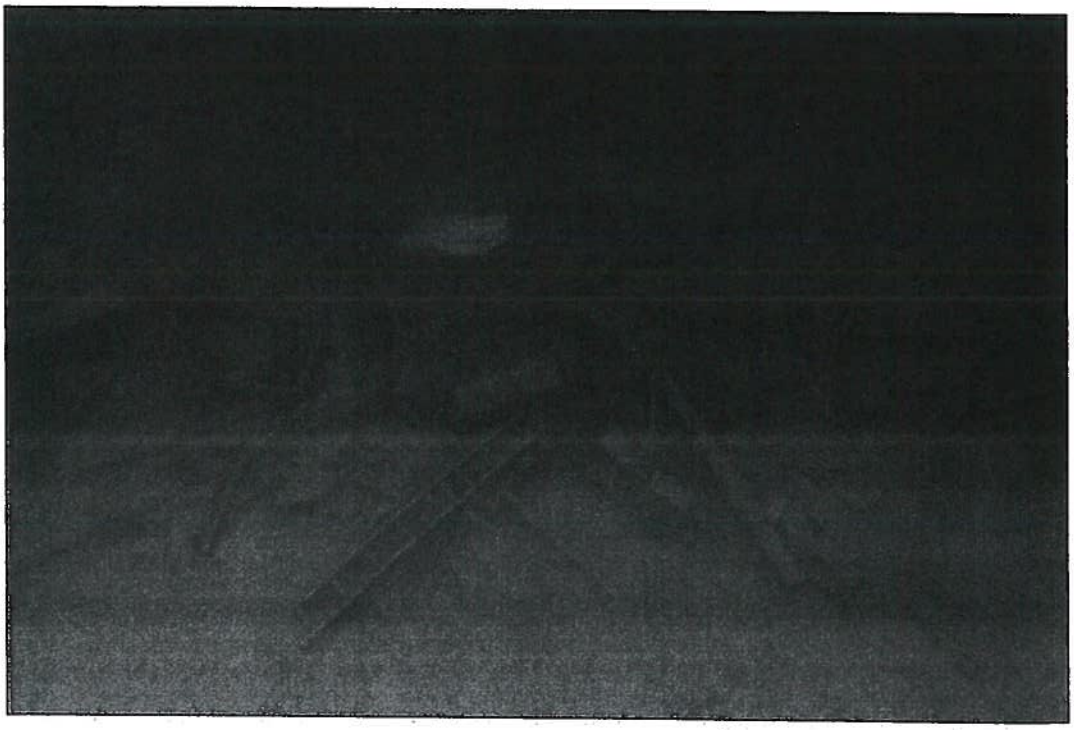

Photo 6. Example of marine debris along the south face of Hotel Wharf within the Direct Impacts Zone, February 2019 (*Courtesy of D. Burdick*).

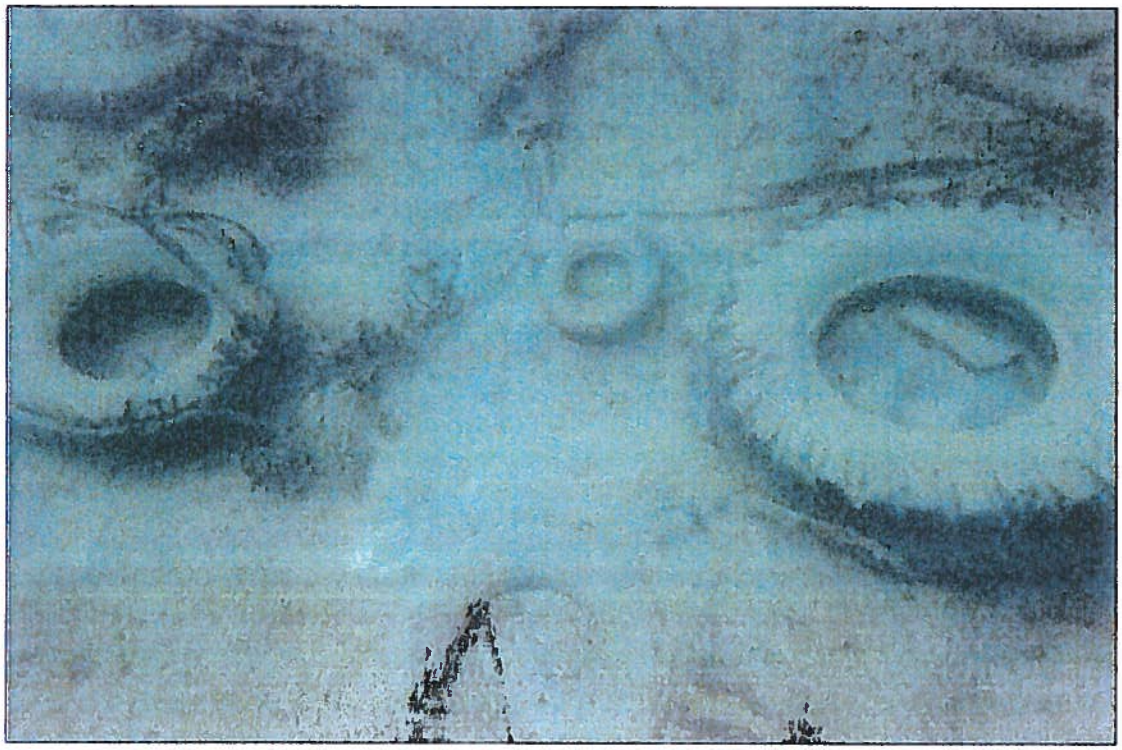

Photo 7. Example of marine debris south of Hotel Wharf within the 20 m Indirect Impacts Zone February 2019 (*Courtesy of D. Burdick*).

3.3 Public Education and Outreach

Public outreach and environmental sensitivity awareness and education will focus on two sites near Hotel Wharf: Outhouse Beach to the east of the wharf, and Dog Leg Pier to the west. This mitigation measure will focus on educating the professional divers and tourist operators that utilize these sites, so that they may, in turn, inform and educate their customers.

Outhouse Beach is one of the most popular beach-entry dive sites on Guam, and accommodates dozens of divers and snorkelers per day. Scientific studies have shown that divers and snorkelers can have a significant negative impact on coral reefs and marine ecosystems (Porter et al., 2005). PAG currently issues permits to dive shops, tour operators, and individuals for using Outhouse Beach for recreational activities.

Multiple marine sports tour operators occupy Dog Leg Pier and adjacent beaches and offer jet skiing, snorkeling, diving, in addition to other marine sports. Jet skiing has the potential to adversely impact coral reefs through direct damage to coral, leaking fuel, and noise (Porter et al., 2005).

3.4 Maximizing Water Quality Improvements through Storm Water Management

The selection of pre-treatment methods for storm water runoff was based upon various design criteria, including the criteria in the *CNMI and Guam Stormwater Management Manual* (Horsley Witten Group, Inc., 2006). The location of stormwater outfalls was based upon design criteria, including the topography and storm water volumes in the sub-basins of the project site.

4 MITIGATION WORK PLAN AND SCHEDULE

4.1 Coral Relocation

There is no need for any heavy construction equipment for the coral relocation. The coral relocation will occur before the installation of turbidity curtains and commencement of construction. Corals identified for relocation will be selected based on the following criteria:

1. **Location**: Within the Direct Impacts Zone
2. **Size**: 10cm-1,000cm
3. **Species**: Excluding encrusting forms, such as *Leptastrea*, diminutive dendrophyliids, or any other corals that would likely not survive the relocation process
4. **Health**: Generally healthy, no bleaching or major paling

Based on size class information collected during the marine surveys, a conservative estimate of 830 coral colonies would be relocated, i.e., 194 colonies within the wharf base (sea floor) and approximately 636 colonies on the wharf face fall within the size range for relocation (i.e., 10 to 1,000 cm) within the Direct Impacts Zone. Based on the abovementioned relocation criteria, approximately 194 colonies would be relocated from the Direct Impacts Zone to the relocation site at Dog Leg Pier. The total coral relocation effort, including mobilization and de-mobilization, and baseline monitoring, is expected to be completed within approximately four (4) weeks, weather permitting.

4.2 Debris Removal

Debris removal will be a one-time effort conducted just prior to construction after deployment of the turbidity curtain. Debris immediately within the Direct Impacts Zone will need to be removed prior to the driving of sheet piles, as the debris may pose a risk of preventing successful pile driving.

4.3 Public Education and Outreach

Within six (6) months of the start of construction at Hotel Wharf (proposed action), the Port Authority of Guam will establish a certification program for all vendors at the Dive Instructor/Dive Guide or Operations Manager level. All vendors at this level will be required to undergo certification before receiving or renewing a permit for commercial activities and tour operations on Port property. National Marine Fisheries Service (NMFS) and Guam Department of Agriculture's Division of Aquatic and Wildlife Resources (DAWR) would be invited to review and contribute to the educational materials for the program. NMFS may be invited to conduct the training, or to train Port personnel to conduct the training. This vendor certification requirement will be incorporated into the lease/permit.

Within six (6) months of the start of construction at Hotel Wharf, the Port will develop and post permanent signs at Outhouse Beach. The signs will display an educational message reviewed by NMFS and DAWR. The Port will maintain the signage for the life of the Hotel Wharf project.

4.4 Maximizing Water Quality Improvements through Storm Water Management

The installation of the storm water improvements would occur during the construction of access road improvements for the proposed action. Catch basins associated with the outfalls would not be connected or come on-line until after construction has been completed. Vegetation would first be established on the grass-lined bioswales prior to activation of the storm water system.

5 METHODOLOGY

5.1 Coral Relocation

During the relocation process, colonies will be removed by chipping the living portion of the colony from the point of attachment or by removing a portion of the substrate along with the attached organism(s). Selected colonies would be removed by divers using a hammer and masonry chisel. Once the corals are successfully removed from the substrate, they will be staged on the seafloor in appropriate containers until they are moved to the relocation site. Each colony will be transported via a support vessel (e.g. dive boat) from Hotel Wharf to the relocation site at Dog Leg Pier. Corals will be transported out of the water since it is not practicable to traverse the distance between Hotel Wharf and the relocation site underwater, and appropriate measures will be taken to ensure the corals survive the relocation (e.g., maintaining proper temperature and moisture requirements, and protecting the colonies from direct sun exposure).

At the relocation site, following the selection of reattachment locations and prior to attaching the corals, reattachment surfaces will be prepared by removing any loose sediment and surficial biota (i.e., algae and fouling organisms). A concrete mixture of approximately one-part Portland cement to one-part sand will be prepared for reattaching corals. Concrete is a much more reliable bonding agent than marine epoxy and is accepted by coral regulatory agencies and research institutes (e.g., National Oceanic and Atmospheric Administration, National Coral Reef Institute, and Florida Marine Research Institute) (National Coral Reef Institute, 2004). Prepared concrete placed in a plastic bucket will be lowered from the vessel to near bottom with lift lines and transported by divers to attachment locations. Alternatively, the concrete can placed in 1-gal heavy duty plastic bags for transport to attachment sites. Proper preparation and application of cement during underwater operations minimizes any sedimentation of cement residue on biota. The concrete is prepared with a minimal amount of water yielding a very dry and "stiff" mixture, which strictly reduces the plume during deployment of the concrete in plastic buckets and during subsequent handling (CSA, 2017).

Sufficient amounts of concrete will be placed directly on the pre-cleaned substrate, and corals to be reattached will be pressed firmly into the concrete mixture until stable and secure. Masonry nails hammered into the substrate can be used in the attachment process to help determine structural integrity at the reattachment location and reinforce the bonding matrix. Masonry nails should be used in the reattachment of relatively large specimens. Reattached specimens will be intermittently checked during reattachment operations to ensure their stability, address the aesthetic quality of the reattachment matrix, and dissipate cement residue that may have settled on adjacent biota (CSA, 2017). No collateral damage to biological resources has been documented from properly conducted restoration where diver application of concrete has been used for coral reattachment (Franklin et. al., 2005; Schittone et. al., 2006).

Coral colonies comprising a subset of the total reattached corals will be selected during the relocation process for long-term monitoring. Approximately 15% to 25% (approximately 125 to 200 colonies) of all relocated corals will be monitored. The monitored group of relocated corals will be representative of the total relative proportions of each taxa that is relocated. A reference group of up to 100 resident corals will also be selected for long-term monitoring based on the degree of stability within the habitat, health, and location relative to the relocation site.

The selected biota will be marked with a unique numeric identification tag and mapped relative to an on-site reference benchmark, typically a fiberglass stake places in a central location within the relocation site. Masonry nails will be used to affix the tags to the substrate directly adjacent to reattached and selected reference corals. To make the distinction between groups visually obvious, the relocated group will be marked with different colored tags than the reference group. Selected corals will be mapped by determining the distance and bearing (compass heading) relative to the geo-referenced

benchmark. Depending on the spatial distribution of the monitored coral, multiple station markers may be required for mapping. Identification tags will be positioned relative to the coral to ensure the tag will be visible in photographic images collected as part of the monitoring program. Mapping data will be entered into GIS software to produce a scaled map of the reattached and reference coral colonies (CSA, 2017). Selected corals will be monitored for health and survivorship for the entirety of the monitoring period.

5.2 Debris Removal

Debris will be removed from the marine environment using a combination of a surface or barge-mounted crane and diver support. Debris removal will only commence once the turbidity curtain is properly installed, as this activity as a high likelihood of increasing local turbidity.

5.3 Public Education and Outreach

The Port will engage NMFS and DAWR for assistance in developing public education and outreach materials to establish a certification program for all vendors at the Dive Instructor/Dive Guide level. The Port will prepare copies for distribution or maintain links on their web site to download these materials by the vendors. The Port will periodically schedule training sessions to present the education and outreach program to vendors applying for, or renewing, their permits.

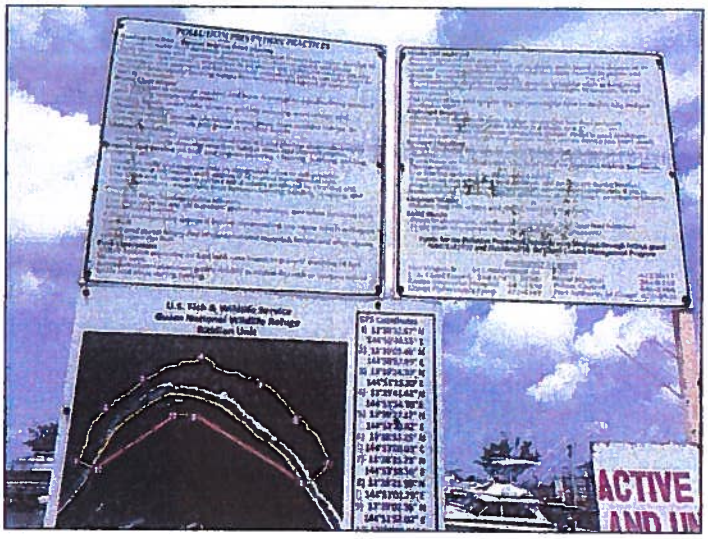

Photo. 8. Example of public advisory sign at Hagatña Marina, March 2019. *Courtesy of F. Camacho.*

The Port will engage NMFS and DAWR for assistance in developing the information for display on permanent signs at Outhouse Beach and Dog Leg Pier, such as the public advisory signs posted at other PAG locations (Photo 8). After review of the information, the signs will be erected in conspicuous locations at these beaches. The Port will periodically check that the signs are in good condition, and replace or repair them as needed, for the life of the Hotel Wharf project.

5.4 Maximizing Water Quality Improvements through Storm Water Management

The installation of storm water infrastructure, including outfalls, catch basins, piping, concrete ditch and grass-lined bioswales (open channels), would follow the engineering design plans that would be submitted to regulatory agencies for the review and approval of the necessary permits, e.g., Building Permit from Guam Department of Public Works.

The bioswales would be either seeded and mulched, or hydro-mulched, to establish the appropriate grassy vegetation. PAG will perform periodic maintenance of the storm water system to ensure it functions as intended.

6 MONITORING PLAN

6.1 Coral Relocation

6.1.1 Post-Relocation Monitoring

Per coordination with USFWS under the Fish and Wildlife Coordination Act (FWCA), the PAG would perform a short, rapid marine biological assessment following the completion of in-water construction activities.
Monitoring will occur over a 36-month (three-year) period, with a total of four (4) separate monitoring events at the following intervals:

1. Baseline Monitoring Event – immediately following coral relocation
2. 6-month Monitoring Event
3. 18-month Monitoring Event
4. 36-month Monitoring Event

Coral Monitoring Reports will be issued to all relevant agencies within 8 weeks of the completion of the site visit and will include written and photographic records of all monitored and reference coral colonies' health conditions. The following information will be collected during each monitoring event: species, maximum diameter, survivorship, percent colony mortality in cases of partial coral death, cause of mortality, if discernible (including abrasion, detachment, fracture/breakage, bleaching, disease, predation, competitive overgrowth, and silt smothering); and any other observations of scientific interest. Direct observations concerning attachment status and relative health of reattached organisms will be made by an experienced scientist at the monitoring site. Relative health of reattached organisms will be based primarily on assessment of color (e.g., normal, pale, or bleached), tissue condition (e.g., degree of accretion/regression, or presence of disease), interspecific events (e.g., clionid intrusion), and algal overgrowth (CSA, 2017).

Comparisons will be made between relocated and reference corals in order to assess the success of relocation efforts. Coral monitoring will be conducted at 6 months post-relocation, 18 months post-relocation and 36 months post-relocation. The 36-month duration is adequate to determine survivorship and relative success of coral relocation. Typically after 6 months, properly relocated corals have acclimated to the potential effects of being displaced, transported, and reattached and will be responding similarly to the reference corals to environmental conditions at the relocation site(s) (CSA, 2017).

A brief written monitoring report will be submitted to the Guam Department of Agriculture Division of Aquatic and Wildlife Resources, the U.S. Army Corps of Engineers and the Guam Environmental Protection Agency, and National Marine Fisheries Service within 3-4 weeks of each monitoring event. The content of the monitoring reports will include sufficient information to document that the performance criteria have or have not been met.

6.1.2 Post-Construction Marine Biological Assessment

Per coordination with USFWS under the Fish and Wildlife Coordination Act (FWCA), the PAG would perform a short, rapid marine biological assessment following the completion of in-water construction activities. The goal of this assessment would be to assess any unanticipated impacts to marine resources associated with construction. The surveys and report would be completed within 60 days of completion of in-water construction, to the extent possible, weather and schedule permitting. The report would be provided to the regulatory review agencies.

6.2 Debris Removal

Photographic records will be taken for all debris removed from the marine environment. Since it is impractical to identify and record each individual piece of debris underwater, this will be completed once the debris is removed from the water. Recorded information should include: photographs, brief description of debris, general location, and approximate footprint in sq. ft.

6.3 Public Education and Outreach

In conjunction with the public education and outreach program, the Port will establish a series of permanent photo stations in those hardbottom areas frequented by users of Outhouse Beach. These photo stations will be fixed locations where photographs will be taken of the benthic environment and analyzed to determine if there are changes to benthic cover (e.g., coral recruitment and percent cover), direct coral damage, and long-term coral growth and recovery. The locations of these photo stations will be selected to maximize the diversity and quality of benthic resources captured within the surveyed area. A baseline survey will be performed prior to implementation of the program to

document existing conditions. Monitoring will be performed at these photo stations at least twice a year and for a minimum of 3 years post-baseline. An annual report will be generated to summarize the results of this surveillance.

6.4 Maximizing Water Quality Improvements through Storm Water Management

PAG will seek coverage under an NPDES Permit for the seven new outfalls, i.e., five along the access road and two on the wharf. Water quality sampling would be performed by PAG on a periodic basis as required under the permit conditions, to confirm compliance with the effluent limits prescribed for the receiving waters.

7 PERFORMANCE STANDARDS

7.1 Coral Relocation

The following criteria will be used to determine or measure the success or failure of the mitigation and the need for maintenance activities.

- Relocated corals established will have greater than 75% survivorship after 6 months, and a survivorship of 65% at 18 months relative to a reference group of resident corals representative of those established as described in Section 4.1.

This performance standard will be used to verify that the project has attained the target functions. The presence of established coral colonies will demonstrate the mitigation site has provided coral habitat and ecological functions similar to the impact area.

7.2 Debris Removal

The Port proposes to remove debris within the Direct Impacts Zone, and a portion of the Indirect Impacts Zone prior to construction. The Direct Impacts Zone encompasses approximately 4,577 sq. ft (425.22 sq. m). Benthic surveys estimate the percent cover of marine debris within this area as 58.2 ± 28.8% along the south face, 1.7 ± 0.0% along the east face, and 3.0 ± 0.0% along the west face (Burdick, 2019). Based on this cover estimate, marine debris within the Direct Impacts Zone is 1,829.81 ± 905.47 sq. ft along the south face, 12.63 ± 0.0 sq. ft along the east face, and 20.7 ± 0.0 sq. ft along the west face. Debris that does not pose an obstacle to the pile driving activities will left in place, enclosed behind the new sheet pile bulkhead, and buried by fill material. Certain non-rigid objects (such as tires) are not suitable for burial and will be removed. Other debris that poses a potential environmental hazard (such as marine batteries), or presents an obstacle to pile driving, will be removed.

PAG originally proposed to remove a portion of the marine debris within the 20 m Indirect Impacts Zone out to approximately 3 ft (0.9 m) seaward from the new bulkhead on the east, west and south sides. This area encompasses approximately 2,019.63 sq. ft (187.63 sq. m). Benthic survey estimates of the percent cover of marine debris within this zone were used to estimate the area covered by marine debris. Based on these cover estimates, the projected area covered by marine debris is 916.24 sq. ft (85.12 sq. m) within this 3-ft wide sector of the Indirect Impacts Zone.

After further coordination with NOAA in May 2019, the PAG agreed to perform additional debris removal to provide additional sand habitat area equivalent to 63 sq. m to offset the project impacts in the Direct Impacts Zone. Per Burdick (2019), the proportion of sand habitat in the Direct Impacts Zone is 34.8% (see Table 4), i.e., 148 sq. m of 425.22 sq. m. The original mitigation plan proposed to offset 85.12 sq. m of this 148 sq. m; the balance is approximately 63 sq. m. Based upon calculations using the average debris density (58.16%) determined from three transects along the south wharf face (Table 8) (Burdick, 2019), in order to offset the balance of 63 sq. m of debris, this requires the removal of debris within an additional 109 sq. m gross area. Therefore, the PAG will increase debris removal by 2.5 feet seaward of the existing south face of Hotel Wharf to encompass this 109 sq. m gross area, yielding the required 63 sq. m net area of sandy habitat.

In summary, debris will be removed 3 ft (0.9 m) seaward of the new bulkhead on the east and west sides, and 5.5 feet (1.67 m) seaward of the new bulkhead on the south side, to provide a total estimated area of 148 sq. m cleared of debris and reclaimed as sandy habitat (Table 8).

Table 8. Estimated Area Occupied by Debris Proposed for Removal from Indirect Impacts Zone

Wharf Side	Gross Area to be cleared for debris removal		Percent Debris Cover			Total Calculated Debris Area (area to be cleared × percent debris cover)	
	Area sq. m	Area sq. ft	Transect 1	Transect 2	Transect 3	Area sq. m	Area sq. ft
South*	253.60	2,729.72	40.10	91.40	43.00	147.49	1,587.60
East*	21.56	232.07	1.70	-	-	0.37	3.95
West**	21.47	231.07	3.00	-	-	0.64	6.93
TOTAL	296.63	3,192.86				148.50	1,598.48

Percent debris cover from Burdick (2019). One transect each set on the east and west wharf sides.
**Debris cleared 3 ft seaward of new sheetpiles; **Debris cleared 5.5 ft seaward of new sheetpiles.*

Debris removal would have met these performance standards by the contractor's completion of a post-debris removal survey. The survey would confirm and document the required extent of debris removal within the Indirect Impacts Zone.

7.3 Public Education and Outreach

The unavoidable loss of 5,698 corals within the Direct Impacts Zone, and the temporal loss of fouling community on the existing wharf face, will be mitigated by the Public Outreach and Education Program. The 5,698 corals is an extrapolation using the average coral density and the area of wharf face to be impacted (Burdick, 2019). These corals do not fit the coral relocation criteria, and are mostly encrusting, low-relief corals that provide little to no structural fish habitat, and small dendrophyllids, which are unlikely to survive the relocation process. Coral colony estimates from the 2019 marine biological survey estimated that 1,657 dendrophyllid spp. and 2,717 *Leptastrea* spp. colonies are present on the wharf face and base (Burdick, 2019, Appendix I). Dendrophyllid spp. and *Leptastrea* spp. collectively account for approximately 67% of existing corals on the wharf face and base within the Direct Impacts Zone.

The temporary sedimentation impacts to corals within and near the turbidity curtain will also be mitigated by the Public Outreach and Education Program proposed by the PAG. An estimated 4,639 coral colonies occur within the 20 m Indirect Impacts Zone (Burdick, 2019). The turbidity curtain will be placed within and not outside the 20 m zone; therefore, the colony estimate encompasses corals within and near the turbidity curtain that may be subject to temporary sedimentation impacts.

Periodic monitoring of the offshore hardbottom areas at Outhouse Beach will be used to gauge the effectiveness of public education and outreach by the Port. PAG would enforce this program with periodic visits and monitoring of the resources against an initial baseline level. Penalties for non-compliance by vendors may include revoking their commercial permit. PAG may consider measures, such as limiting the volume of patrons per day or per week, if an increase in physical damage to the resources is detected.

8 SITE PROTECTION AND MAINTENANCE

8.1 Parties Responsible

The Port Authority of Guam will be responsible for completing the minimization and mitigation measures for the Hotel Wharf Maintenance and Repair project in Apra Harbor, Guam.

8.2 Long-term legal protection instrument

The mitigation sites are located entirely within submerged lands under the jurisdiction of the Port Authority of Guam, Government of Guam. It is not likely that the mitigation sites would change ownership. The coral recipient site at Dog Leg Pier is located farther west and beyond the proposed action area for the deep draft wharf and fill improvements

project, which involve dredging for harbor expansion (U.S. Army Corps of Engineers and Wil Chee Planning, Inc., 2007). As further protection during the 36-month monitoring period, PAG will also install a marker at the coral recipient site to alert recreational users to maintain a sufficient distance from the area.

8.3 Maintenance plan and Schedule

The Port Authority of Guam will be responsible for the regular maintenance of the signage at the Outhouse Beach and Dog Leg Pier mitigation sites. Maintenance will be scheduled as needed, depending on evaluation by PAG management, to keep the signage in good working order. The Port is also responsible for regular inspection and maintenance of the storm water collection and outfall system to ensure the system is functioning as intended.

9 ADAPTIVE MANAGEMENT PLAN

If any of the performance criteria are not met for all or a portion of the mitigation project, The Port Authority of Guam or its agent shall prepare an analysis of the cause(s) therefore and, if deemed necessary by the Corps, propose remedial actions for Corps approval. The remedial action will be completed as directed by the Corps.

The coral relocation will be considered a success if 75% of the corals survive to 6 months, and 65% survive to 18 months and successfully remain affixed to the substrate. Mortality rate of >65% at 18 months (barring a bleaching event or storm) would be considered high mortality. In the event 75% survival and 65% survival relative to the reference group is not achieved after 6 and 18 months, respectively, then contingency mitigation will be negotiated with regulatory agencies.

Potential challenges include preventing invasive species from becoming established, and addressing elevated sea surface temperature that result in coral bleaching events. Storms also present a challenge if they dislodge the fragments or result in abrasion or breakage of the colony. Elevated sea surface temperatures are difficult to address and predict.

For the public education and outreach program and storm water management improvements, if monitoring reveals a decline in benthic cover or water quality, the Port would consider whether additional measures are warranted. These may include limiting the use of the site to a certain number of patrons, or restricting use to a certain number of days per week.

10 FINANCIAL ASSURANCES

The Port Authority of Guam would be responsible for the mitigation of the project site impacted by the proposed action, including sheet pile driving, backfilling, and associated construction activities. The project would be funded by the Port Authority of Guam. Upon completion of construction, PAG would also be responsible for performing regular monitoring of the mitigation sites as described in Section 6. Should the monitoring identify issues that require remedial measures, implementation of those measures would be the responsibility of PAG. The overall responsibility for project success is with PAG. Contact information for PAG is presented below:

Port Authority of Guam
1026 Cabras Highway, Suite 201 Piti,
Guam 96915
(671) 477-5931

11 REFERENCES

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Project Maps

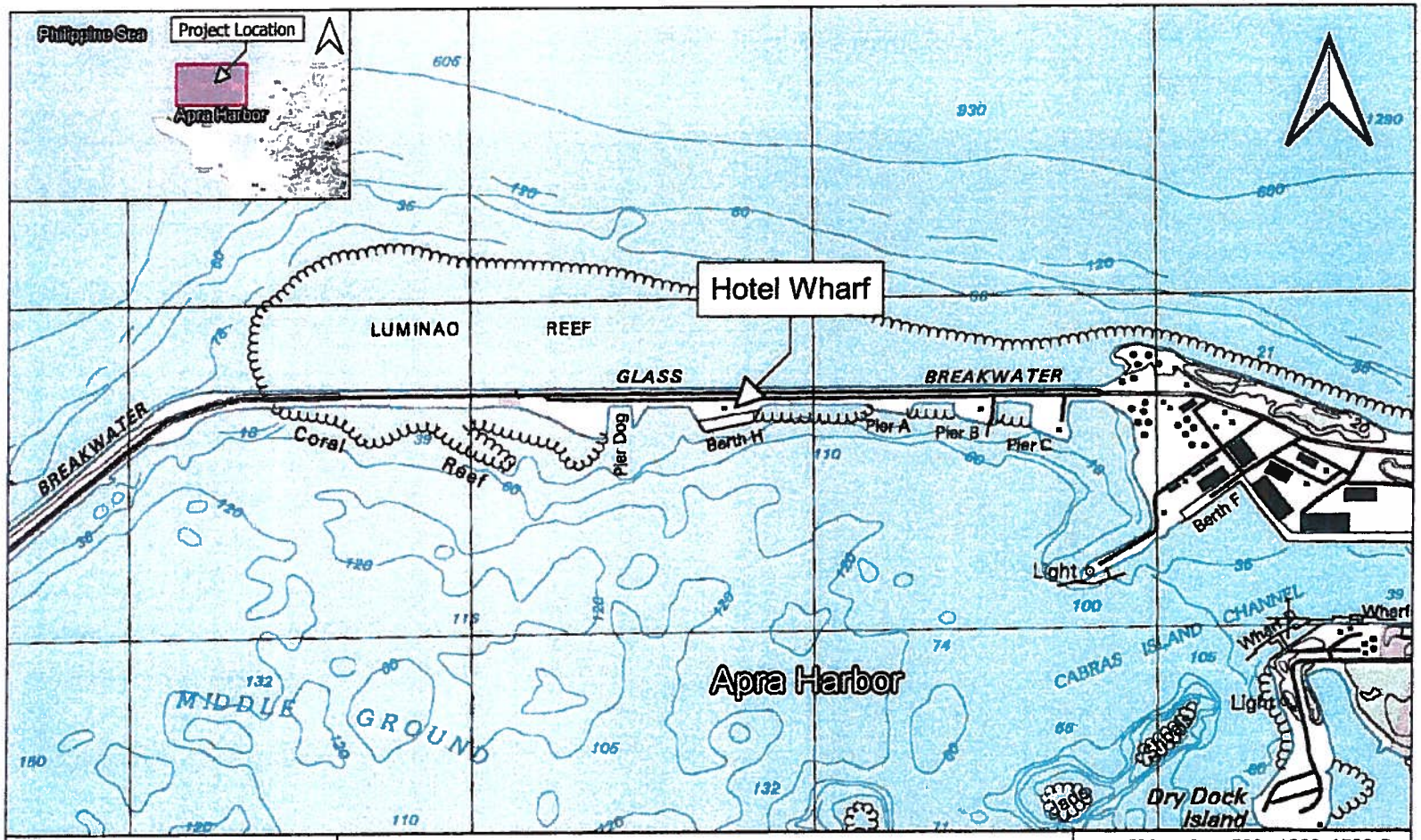

Figure 1. USGS Site Location Map

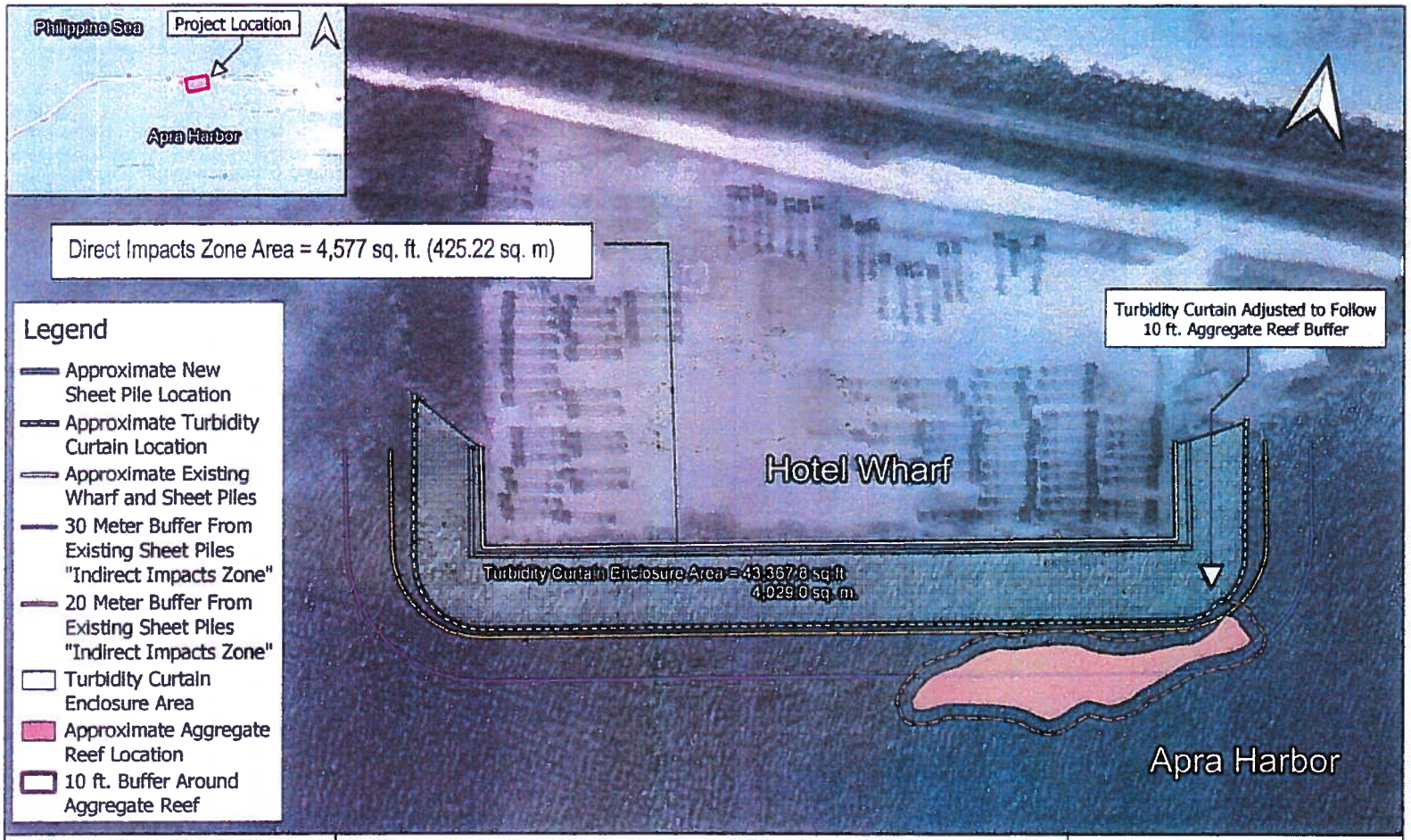

Figure 2. Satellite Imagery and Project Boundaries.

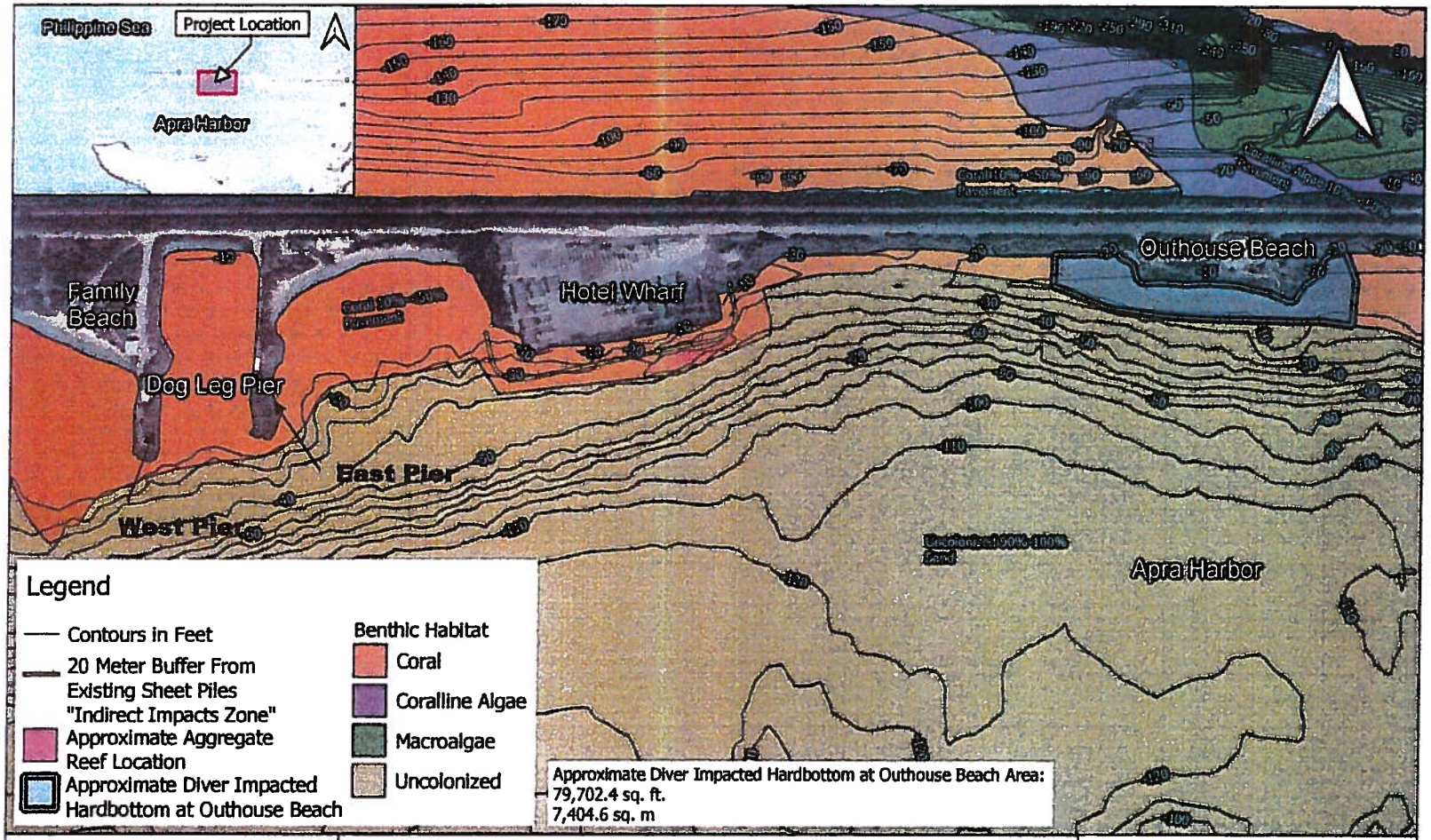

Figure 3. Benthic Habitat Map of Hotel Wharf.

Attachment

3. Office of Economic Adjustment, Notification of Award, August 2019

Staff Comments
Dear Sir/Madam,

Please contact your program manager for further details.

OMB Number: 4040-0004
Expiration Date: 10/31/2019

Application for Federal Assistance SF-424			
1.Type of Submission: ☐ Preapplication ☑ Application ☐ Changed/Corrected Application	2.Type of Application: ☑ New ☐ Continuation ☐ Revision	* If Revision, select appropriate letter(s): * Other (Specify):	
3.Date Received:	2019-07-25 00:27:08	4.Applicant Identifier:	
5a. Federal Entity Identifier:	NC2019-1491	5b.Federal Award Identifier:	
State use Only:			
6.Date Received by State:		7.State Application Identifier:	
8. APPLICANT INFORMATION:			
a.Legal Name:	Government of Guam		
b. Employer/Taxpayer Identification Number(EIN/TIN):	98-0018947	c. Organizational DUNS:	778904292
d. Address:			
Street1:	P.O. Box 2950		
Street2:			
City:	Hagatna		
County/Parish:			
State:	GU		
Province:			
Country:	United States		
Zip / Postal Code:	96932-2950		
e. Organizational Unit:			
Department Name:		Division Name:	
f. Name and Contact Information of person to be contacted on matters involving this application:			
Prefix:	Ms	First Name:	Carol
Middle Name:	M.		
Last name:	Perez		
Suffix:			
Title:	Grants and Contracts Executive Assistant		
Organization Affiliation:	Government of Guam		

Telephone Number:	(671) 472-8931	Fax Number:	
Email:	carol.perez@guam.gov		

Application for Federal Assistance SF-424
9. Type of Applicant 1: Select Applicant Type:
F: U.S. Territory or Possession
Type of Applicant 2: Select Applicant Type:
Type of Applicant 3: Select Applicant Type:
Other (specify):
10.Name of Federal Agency:
Office of Economic Adjustment
11. Catalog of federal Domestic Assistance Number:
12.618
CFDA Title:
12.618 Community Economic Adjustment Assistance for Establishment or Expansion of a Military Installation
12. Funding Opportunity Number:
Title:
13. Competition Identification Number:
Title:
14. Areas Affected by Project (Cities, Counties, States, etc.):
15. Descriptive Title of Applicant's Project:
Territory of Guam
Attach supporting documents as specified in agency instructions.:

16. Congressional Districts Of:			
a. Applicant		b. Program/Project	
Attach an additional list of Program/Project Congressional Districts if needed.			
17. Proposed Project:			
a. Start Date:	2019-09-01	b. End Date:	2021-02-28
18. estimated Funding ($):			
a.Federal:	$800,000		
b. Applicant:	$0		
c. State:	$0		
d. Local:	$0		
e. Other:	$0		
f. Program Income:	$0		
g. TOTAL	$800,000		
19. Is Application Subject to Review By State Under Executive Order 1372 Process?:			
☐ a. This application was made available to the State under the Executive Order 12372 Process for review on ☑ b. Program is subject to E.O. 12372 but has not been selected by the State for review ☐ c. Program is not covered by E.O. 12372.			
20. Is the Applicant Delinquent on Any Federal Debt? (If "Yes", provide explanation in attachment.)			
☐ Yes		☑ No	
21.By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)			
☑ ** I AGREE			
** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.			
Authorized Representative:			
Prefix:		First Name:	Tony
Middle Name:			
Last name:	Babauta		
Suffix:			
Title:	Chief of Staff		
Organization Affiliation: Government of Guam			
Telephone Number:	671-475-8931	Fax Number:	
Email:	tony.babauta@guam.gov		
Signature of the Authorized Representative:		Date Signed:	

Application Narrative

Use this section to describe the proposed project and justify the need for financial assistance. The Narrative should include the following sections, in the following order: Application Abstract; Introduction/Background; Need for Assistance; Project Goals and Objectives Related to OEA Mission; Results or Benefits Expected; Approach & Timeline; and Deliverables/Products. Each section is limited to 1,000 words, unless otherwise noted. Appendices, charts, maps and other illustrative materials may be attached to further describe the proposal.

Key Personnel

Name	Title	Email	Resume

Contractor Services

Does this grant require use of contractor services?

Yes

Contractor Name	Description	Start Date	End Date	Scope of Work

Sub Recipient

Do you anticipate awards to any sub recipients?

Yes

Provide details of sub award recipients

The Port Authority of Guam will be the Sub-Recipient. The Port Authority of Guam is an autonomous agency of the Government of Guam. The Office of the Governor and the Port Authority of Guam will execute a Memorandum of Agreement in accordance with the Government of Guam internal controls.

Deliverables Instructions

Identify tangible products and/or other projected work program accomplishments Examples include, but are not limited to, Joint Land Use Study Final Report; Base Redevelopment Plan and Homeless Assistance Submission; Infrastructure Analysis and Recommended Improvements; Defense Industry Supply Chain Map; or Growth Management Plan

Grant Deliverable List

Name	Description	Deliverable Date
Program Management and Coordination	Administrative Records that Include: Email Communications; Strategy Write-Ups; Monthly Progress Reports; Monthly Invoices, Site Visits Agendas and Meeting Notes; and Briefing Materials	02/28/2021

2020 Master Plan	2020 Master Plan Update will include: Project Kick Off and Data Collection; 2013 Master Plan Overview; Current Conditions Assessment; Stakeholder Outreach; Market Analysis and Cargo / Revenue Forecast Review; Capacity and Demand Analysis; Modernization Program Progress and Scenario Requirements; Public Hearing Materials; etc.	02/28/2021
Guam Customs Inspection Feasibility Study	The Feasibility Study will include: a) Review and assess the current mandates of the CQA and provide recommendations to enhance its policies on monitoring, detecting, interdicting, enforcing, and imposing legal fines/actions to non-compliant customers. b) Evaluate and provide an analysis of the potential impact of the proposed construction of a Customs Inspection Facility. c) Conduct a market study as well as an economic analysis to provide CQA management with knowledge of the financial resources required to finance the project and expectations by the Government, stakeholders and the people of Guam from the investment utilized to execute Public Law 34-112 to complete the construction of a Customs Inspection Facility. d) Provide recommendations on best approach for the usage of technology and innovation into the Scope of constructing the inspection facility and integrating a fixed container and vessel screening system that will increase the CQA's screening capacity to over 50%.	02/28/2021
Conceptual Planning and Development of an A&E Scope of Work	a) Consultant will review, assess, and update the June 2010 Administration Building preliminary design submittal b) Consultant will coordinate with the PAG's Information Technology (IT) Division to ensure that requirements for integration of the Kantech CCTV and Access Control System, Terminal Operating Systems (TOS) and Oracle JDE EnterpriseOne Financial Management System are clearly specified. c) Consultant will work with PAG Management on potential considerations for: i. Needs of various Port Divisions ii. Needs of Port Tenants d) Consultant will ensure that the following requirements are highlighted in the final A&E Design Scope of Work: i. Plans, specifications/reports and cost estimates to be used for competitive bidding for construction. A&E Services will consist of the planning and design of a new Port Administration Building and renovation of the existing Administration Building, to meet the latest Federal/Local regulations and Building Codes. ii. The A&E Scope of Work will be open ended and not limited to the following: Site investigations; programming, development of a Basis of Design, schematic design and site planning; design development; preparation of a detailed design analysis, bidding phase services, and limited construction support services. iii. Prime A&E Consultant will require the services of other specialized fields of engineering for surveying, environmental analysis, civil and structural engineering, electrical, mechanical and plumbing, and landscape architecture. iv. Include the application of necessary clearances and permits such as Department of Public Works (DPW), Guam Environmental Protection Agency (GEPA) and other local government agencies as required. v. Consultant shall respond to RFIs, review and approve shop drawings and material submittals. vi. Perform other required services as necessary and as determined by the Port Engineering Division	02/28/2021
Deep Draft Wharf and Fill Improvements Project Feasibility Study	a) Consultant will work with the Port to perform a Feasibility Study on the financial and operational impact of the Project to the Port. b) Consultant will review and assess the July 2007 DEIS and make recommendations on best approach to perform a new Environmental Impact Statement, if prudent. c) Consultant will review and assess the need for the Project and provide recommendations that may support and enhance the Port's chances of an updated EIS to be issued supporting updated alternatives and mitigation plans for the Project. d) Consultant will review and assess the Project objectives and update as necessary based on current Port needs, both short and long term. e) Consultant will work with Port Management on potential considerations for: i. Bond Financing ii. Impact to Port Tariff iii. Private-Public Partnerships	02/28/2021

Goals related to OEA mission instructions

N/A

Goals related to the OEA mission

Continue to sustain and enhance the operational effectiveness, resiliency, and sustainability of the Port Authority of Guam, which is vital to ensuring Guam's geographic strategic importance to the United States. The number, type, and variety of Department of Defense (DoD) initiatives underscore Guam's strategic and tactical value to the DoD and to the Nation; especially in regards to the National Defense Strategy. The island of Guam is often referred to as the "tip of the spear" in the Western Pacific. The viability of the Port of Guam is paramount to sustaining the military's operational effectiveness and mission readiness in the Western Pacific theater of operations, in an ever evolving, dynamic, and challenging geopolitical environment.

CAGE Code: 4BGKo

Grant Introduction/Background

Territory of Guam

The Port Authority of Guam (hereafter referred to as the Port or PAG), in collaboration with the Office of the Governor of Guam, and with the assistance of the Office of Economic Adjustment (OEA), continues its modernization efforts through the identification, implementation, and completion of major Port Modernization Program (PMP) projects that enhance the resiliency and core capabilities of the Jose D. Leon Guerrero Commercial Port.

As the only seaport serving the island of Guam, over ninety percent (90% +) of all goods and materials arrive through the Port. It serves as the life line to the island and to the surrounding Micronesia Region island communities. To ensure the uninterrupted free flow of commerce, the 2013 Master Plan PMP was structured to: 1) maintain and sustain the operational and financial capability of the Port, 2) support all current commercial, federal, and military activities on Guam and within the Commonwealth of the Northern Mariana Islands, and 3) continue to provide a high standard of customer service while responding to cargo handling demands that are projected to increase due to the island's organic growth and the military realignments and buildup activities within the region through 2029. The PMP has achieved this focus through the development and execution of projects categorized into two components of the Port Improvement Program (PIP) - Port Modernization and Sustainability Projects (see attached diagram).

The scale, complexity, and challenges of the PIP were unprecedented for the Port and required considerable technical expertise, capacity, and capability not present within the Port's in-house staff and resources. Hence, the Port engaged the services of a professional maritime consultant as its Owner's Agent Engineer (OAE) to provide the proper knowledge and necessary technical expertise in support of its modernization efforts.

To date, the Port continues to make major advances in the implementation of the PIP through the professional and technical services of its OAE. The OEA program of assistance has been instrumental to the Port's progress and accomplishments to date.

From FY2014 to FY2017, the Port has made tremendous strides in moving forward with a number of OEA supported initiatives to include: 1) the 2013 update of the 2007 Port Master Plan; 2) the issuance of a professional services contract to install an automated Terminal Operating System (TOS); 3) technical assistance on the award of marine construction projects for the Service Life Extension of existing wharfs; 4) analyses to support the 2013 and 2015 Interim Tariff Petitions; 5) analyses and schedules to support the 5-year Tariff Petition in 2017; 6) the implementation of a crane surcharge to cover gantry crane O&M expenses, funding for debt service, and funding for future procurement of replacement gantry cranes; 7) the completion of structured maintenance plan recommendations for the Port's gantry cranes and full range of terminal yard cargo handling

equipment. The structured maintenance program for the cranes has served as a framework for obtaining the services of a crane maintenance Performance Management Contractor (PMC) to provide enhanced technical assistance in support of the gantry crane preventive maintenance program.

In addition, through the FY2018 OEA funded grant award, the Port continued to embark in its Capital Improvement Program (CIP) that was crucial to ensuring the agency's operational and financial stability.

Specifically, the FY2018 OEA program of assistance supported the extension of the current OAE professional services contract for ongoing and future technical requirements that included: 1) program management; 2) annual tariff verifications and updates as required and annual Public Utilities Commission (PUC) reporting; 3) CIP project planning support services; 4) facility and equipment maintenance program enhancements; 5) preparation of gantry crane demolition and procurement documents; and 6) further TOS refinements.

The OAE support was important in maintaining continuity and momentum in the PIP's initiatives and provided a comprehensive picture of the Port's modernization efforts that led to the smooth transfer of institutional knowledge to the Port's incoming management team, under Governor Lou Leon Guerrero and Lt. Governor Joshua Tenorio's administration.

Department of Defense (DoD) Initiatives

The DoD has initiated several independent Environmental Impact Statements / Overseas Environmental Impact Statements (EIS/OEIS) that directly impact the Territory of Guam. The EIS/OEIS have independent proposed actions, but all actions are critical to ensuring mission and operational readiness. The following are the EIS/OEIS:

- United States Pacific Fleet, May 2015, Mariana Islands Training and Testing (MITT) FEIS / OEIS
- United States Navy, July 2012, Guam and Commonwealth of the Northern Mariana Islands Marine Relocation Supplemental EIS (SEIS)
- United States Navy, July 2010, Guam and Commonwealth of the Northern Mariana Islands Marine Relocation FEIS
- United States Pacific Fleet, May 2010, Mariana Islands Range Complex (MIRC) FEIS/OEIS

In addition, DoD has two major initiatives proposed for the Commonwealth of the Northern Mariana Islands (CNMI): the United States Air Force Divert Activities and Exercises Initiative; and the Commonwealth Joint Military Training Initiative. Since the Port serves as the transshipment port for the surrounding islands, the CNMI initiatives will have a direct impact on the Port of Guam.

Need for Assistance

The Government of Guam, in particular the Office of the Governor and the PAG continues to expend considerable time, energy, and resources responding to the Department of Defense Process Review Initiative (DPRI), which includes ensuring the Port is resilient, efficient, and responsive to both organic and DoD cargo demands. The DoD realignment and buildup programs for Guam coupled with existing Guam DoD missions and recent DoD initiatives within the Commonwealth of the Northern Mariana Islands have placed an unprecedented demand on increasing the cargo throughput at the Port. The PAG has made significant enhancements to the Port, leveraging scarce funding from a diversity of sources. This Grant Application, if approved, will enable the PAG to more effectively and strategically focus and leverage limited or scarce resources that produce and / or lead to significant and tangible outcomes for all the people of Guam; inclusive of DoD.

Several factors impact the Government of Guam and the PAG's ability to continue to support and be responsive to DoD's initiatives / programs: These factors are:
1) protracted period of execution for DoD initiatives / programs;
2) reduction of permanently assigned US Marines to the island of Guam, which in turn impacts the Section 30 Revenue Stream;
3) recent change to the Federal Tax Laws, which adversely impacted the Government of Guam;
4) need to issue a $20 Million bond for the construction of a new landfill cell, which is required to sustain the current and projected island population; and 5) Port's recent Bond issuance to support critical CIP, etc.

Absent OEA's program of assistance, the Office of the Governor, the Government of Guam, and the PAG do not have the resources to carry out this activity. The Government of Guam and the PAG do not have the financial resources available to support the ongoing unfunded requirements generated by the DOD Program.

Grant Abstract

The grant sustains and enhances the operational effectiveness, resiliency, and sustainability of the Port, which is vital to ensuring Guam's geographic strategic importance to the United States. A major and tangible benefit is the grant enables the Port Authority of Guam to increase the cargo through put that is critical to the relocation of the Marines from Japan to Guam and sustaining the critical legacy missions. Over ninety percent of all goods (organic island growth and military requirements arrive on island via the Port of Guam. In addition, the Port of Guam is the transshipment port for all the surrounding islands; inclusive of the Commonwealth of the Northern Mariana Islands (CNMI). The Department of Defense have two major programs proposed for the CNMI, thus ensuring the Port of Guam is a viable transshipment port is paramount to the Department of Defense.

The grant enables the Port Authority of Guam to ensure the Capital Improvement Projects are aligned, planned, designed, and constructed as sound investments that proactively take into account the evolving cargo transshipment demands and changes in technology. In addition, the grant supports several feasibility studies (i.e. Customs Inspection Feasibility Study, Deep Draft Wharf and Fill Improvements Project Feasibility Study, etc.), which will enable the Port Authority of Guam to determine the appropriate timing and funding mechanism to ensure the port's operational resiliency and responsiveness.

The number, type, and variety of DoD initiatives underscore Guam's strategic and tactical value to the DoD and to the Nation; especially in regards to the National Defense Strategy. The island of Guam is often referred to as the "tip of the spear" in the Western Pacific. The viability of the Port is paramount to sustaining the military's operational effectiveness and mission readiness in the Western Pacific Theater of operations, in an ever evolving, dynamic, and challenging geopolitical environment.

Results or Benefits Expected

1) The DoD current investments in the Port are soundly sustained.
2) The Port Modernization Program advances efficiently, effectively, and responsibly.
3) The Port's operations and cargo handling capability (status quo, organic growth, and military realignment and buildup) are reliable, resilient, and sustainable both near term and long term.
4) The Port's continued investment in the Port Modernization Program, inclusive of the Port's capital improvement projects.
5) Enhancing DoD's operational effectiveness and mission readiness in the Western Pacific.

Approach and Timeline

1) Approach
The Office of the Governor will serve as the sponsor on the Port Authority of Guam Master Plan Grant Award. The PAG will be the sub-recipient, as per previous Port Grant Awards. The following approach is proposed:
a) The Office of the Governor and the PAG will execute a Memorandum of Agreement (MOA), in accordance with Government of Guam internal controls.
b) The PAG will use the current Owner's Agent Engineer (OAE) Contract, an Indefinite Delivery Indefinite Quantity (IDIQ) Contract.
- The PAG opted to utilize an IDIQ as a means to retain and leverage expertise and to retain corporate knowledge on a protracted, complex, and challenging program.
- The OAE was selected via a competitive solicitation. This Grant Award will not include issuance of a Request for Proposal (RFP).
- The Grant Scope of Work will be included in the OAE Contract, upon successful negotiations

2) Timeline
The PAG Master Plan Update Grant Award Performance Period is eighteen (18) months.
- Performance Period Start Date: September 1, 2019
- Performance Period End Date: February 28, 2021

Note: See Attachment titled Timeline Details for additional details.

Purpose of Office of Economic Adjustment Assistance

The PAG is seeking OEA program of assistance to achieve port resiliency, enhance the port's core capabilities, and ensure that the following strategic objectives are met: 1) the DoD technical and financial assistance are soundly invested; 2) the PMP continues to advance efficiently, effectively, and responsibly; and 3) the port operations and cargo handling capability (status quo, organic growth, and military realignment and build-up) is sustainable both near term and long term while the Port continues with its modernization program and capital improvement projects. Ensuring that the Port is resilient and sustainable it critical to ensuring the Guam's strategic contribution to the Nation's security.

The current OAE contract (an Indefinite Delivery Indefinite Quantity contract) was extended into 2018 and through 2019. The Port is seeking OEA program assistance to support the continuation of OAE professional and technical support services in light of the Port's implementation of its Capital Improvement Program, which is crucial to ensuring the agency's operational and financial sustainability.

OEA's FY2019 program of assistance will support the extension of the OAE contract for ongoing and future technical services. The detailed OAE Scope of Services will include: 1) Program Management and Coordination, 2) Update of the current 2013 Master Plan, 3) Customs Inspection Feasibility Study, 4) Conceptual Planning and Development of a scope of work for A&E Design Services of the New Administration Building Annex and Renovation of the Existing Admin. Building, and 5) Deep-Draft Wharf and Fill Improvements Project Feasibility Study.

Scope of Work/Work Program

1) Program Management and Coordination

The OAE will continue to provide professional and technical services to the Port consistent, pursuant to, and in accordance to the identified Scope of Services. In addition, the OAE shall provide all qualified personnel, materials, and resources to perform the consulting services set forth in this grant application to include the following:

a) OAE will provide task-related staff, program and contract management, and accomplish task-specific coordination with the Port and other stakeholders through email exchanges, conference calls, periodic site visits, meetings concurrent with site visits and periodic status reports.
b) OAE will perform and/or assist the Port in performing stakeholder briefings and developing presentation materials as may be required.
c) OAE will assess progress and suggest strategies and task adjustments as may be required to achieve desired objectives.
d) OAE will prepare timely and accurate monthly progress reports supporting and justifying any and all invoices for services performed under each subtask.
e) OAE will prepare a comprehensive quarterly programmatic and financial status report for submission to the OEA and must be completed on or before the 10th day of the first month after the reporting period.
f) OAE will perform quality assurance and control measures for all subtask deliverables.
g) This effort applies to the implementation and coordination of all subtasks identified herein.
h) Target Deliverables include:
i. Miscellaneous Email Communications as needed
ii. Strategy Write-up(s) when and as needed
iii. Monthly Record Keeping and Progress Reports
iv. Monthly Invoices and Backup
v. Site Visit Meeting Agenda and Minutes
vi. Briefing Materials as may be required

2) Development of a 2020 Master Plan, which will be an update to the current 2013 Master Plan

The intent of the of the 2020 Master Plan is to accurately and effectively articulate the Port's continued near and long term approach (vision) to modernization while it becomes more self-sufficient, achieves fiscally sustainable operations, and promotes increased awareness and consensus among all affected stakeholders.

The 2020 Master Plan is intended to provide a comprehensive review of the Port's current condition, identify the elements of continuous improvement and sustainability, and articulate an implementation strategy that remains coordinated with the anticipated forces of change within the foreseeable planning horizon.

Updating the current 2013 Master Plan will involve four elements of validation, review and coordination:

1) Analyze and update, when appropriate, the assumptions and criteria that underlie the current 2013 Port Master Plan.
2) Validate and integrate key elements identified in reports that were developed since the 2007 Master Plan Update was released.
- Master Plan Approval Documents
- Cargo Forecast Update
- Terminal Development and Operations Plan
- Terminal Operating System and Gate Operating System Reports
- Implementation Plan

3) Expand the scope of the Plan to include an updated implementation strategy based on Port financial, operational,

sustainability needs, updated cargo and revenue projections, existing tariff rates and planned future adjustments, progress accomplished through federally funded, Bond funded, and Port Revenue funded modernization initiatives, and a coordinated future funding approach involving grants and self-financing.

4) Validate and incorporate decisions and outcomes of various initiatives and policy changes that have occurred over the past five years.

In addition, the 2020 Master Plan will include the following initiatives:

a) Review, assess, and provide recommendations to enhance the core capabilities of the Operations, Maintenance, and IT Divisions to further achieve port resiliency
b) 20 Year Crane Replacement Plan and Schedule
c) Assess and provide recommendations for the usage of Area A for the purpose of achieving additional Port revenue
d) Comprehensive assessment and design scope development of all Port wharves and proposed phased repair/rehabilitation schedule
e) Review and assess all existing Commercial lease rates and provide recommendations on potential rate increases based on current market value, if necessary
f) Assess and provide recommendations for the usage of the Old Hawaiian Rock area as a recycling area for the purpose of achieving additional Port revenue

Similar to the course of actions undertaken during the 2013 Master Plan Update, the following technical approach is envisioned in order to achieve the goals described above.

a) Project Kick Off and Data Collection
b) Update the 2013 Master Plan Overview
c) Review and Assess Current Conditions
d) Stakeholder Outreach
e) Market Analysis & Cargo/Revenue Forecast Review
f) Update Capacity & Demand Analysis
g) Update Modernization Program Progress & Scenario Requirements
h) Assistance and/or participation in required public hearings
i) Final Recommendations
j) Preparation of requirements pursuant to 5GCA Chapter 9 § 9301 and any other legislative requirements for final review and approval of the Master Plan

The 2020 Master Plan shall also include outreach materials that effectively capture and depict the Port's evolution starting from 2007 to the present.

3) Guam Customs Inspection Feasibility Study

Public Law 22-112 Section 3(b) states "the Customs and Quarantine Agency (CQA) is authorized to implement and enforce the provisions of Chapter II of Title XLIV of the Government Code and all rules, regulations, and executive orders relative to customs and quarantine function of the government of Guam."

CQA's Maritime Section is responsible for executing entry and admissibility inspections of all conveyances, commodities, containers, freight and individuals entering the Port. With approximately 96,000 containers passing through the Port annually, the Maritime Section, currently staffed with nine (9) officers, is charged with the daunting task of ensuring the admissibility of goods, interception of prohibited or illicit commodities, and enforcing regulatory compliance of all goods imported to Guam.

The process of manually monitoring, identifying, and detecting goods by customs officers has been unchanged for many years,

relying heavily on the consignee's statement of goods identified in their respective shipping documents.

To assist the CQA with screening containerized and break bulk cargo, the Port acquired a mobile x-ray screening van in 2014 that has improved monitoring and deterring activities which resulted in the mitigation of potential illegal contraband entering the Port. Since the mobile scanning unit's deployment, a number of successful significant interdiction were achieved by CQA.

Although significant in terms of the CQA's enhanced monitoring capability, the x-ray system can only process 10% - 15% of container and break bulk cargo. Building on the success of the current capability, the CQA will be working aggressively to increase its monitoring capacity to 40% - 50% within the next couple of years.

On July 17, 2018, Public Law 34-112 was enacted "to provide the CQA with administrative jurisdiction of a 4-acre parcel of land at the Port for the purpose of developing and constructing a Customs Satellite, Inspection, Holding, and Secured Sterile Facility for use by the CQA, the Port, and the people of Guam".

In support of the implementation of Public Law 34-112, a Customs Inspection Feasibility Study will be conducted to address the following:

a) Review and assess the current mandates of the CQA and provide recommendations to enhance its policies on monitoring, detecting, interdicting, enforcing, and imposing legal fines/actions to non-compliant customers.
b) Evaluate and provide an analysis of the potential impact of the proposed construction of a Customs Inspection Facility.
c) Conduct a market study as well as an economic analysis to provide CQA management with knowledge of the financial resources required to finance the project and expectations by the Government, stakeholders and the people of Guam from the investment utilized to execute Public Law 34-112 to complete the construction of a Customs Inspection Facility.
d) Provide recommendations on best approach for the usage of technology and innovation into the Scope of constructing the inspection facility and integrating a fixed container and vessel screening system that will increase the CQA's screening capacity to over 50%.
e) Determine the factors that will make the intent of building a customs inspection facility a prudent and wise decision to enhance the CQA's core capabilities.

4) Conceptual Planning and Development of a Scope of Work for A&E Design Services of the New Administration Building Annex and Renovation of the Existing Admin. Building

Public Law 34-70 was enacted on December 7, 2017 authorizing the Port to issue revenue bonds to fund six (6) capital improvement projects. One of the projects was the proposed construction of a new administration building to the tune of $17.5 Million.

Recommended by new Port Management and endorsed by the Port Board of Directors, the Port is working with its Legislative Oversight Chairman to re-program $7 Million of the $17.5 Million to repair/upgrade more critical projects that are revenue generating and in the best interest of the Port.

The reset will call for the reduction of the foot print of the proposed new Administration Building and provide for the renovation of the existing Administration Building to be ADA compliant.

The OAE will be tasked to assist with the conceptual planning and development of a Scope of Work for the Port to incorporate in the issuance of its Request for Proposals for A&E Design Services.

The following objectives will be addressed by this task:

a) Consultant will review, assess, and update the June 2010 Administration Building preliminary design submittal
b) Consultant will coordinate with the PAG's Information Technology (IT) Division to ensure that requirements for integration of the Kantech CCTV and Access Control System, Terminal Operating Systems (TOS) and Oracle JDE EnterpriseOne Financial Management System are clearly specified.
c) Consultant will work with PAG Management on potential considerations for:
i. Needs of various Port Divisions
ii. Needs of Port Tenants
d) Consultant will ensure that the following requirements are highlighted in the final A&E Design Scope of Work:
i. Plans, specifications/reports and cost estimates to be used for competitive bidding for construction. A&E Services will consist of the planning and design of a new Port Administration Building and renovation of the existing Administration Building, to meet the latest Federal/Local regulations and Building Codes.
ii. The A&E Scope of Work will be open ended and not limited to the following: Site investigations; programming, development of a Basis of Design, schematic design and site planning; design development; preparation of a detailed design analysis, bidding phase services, and limited construction support services.
iii. Prime A&E Consultant will require the services of other specialized fields of engineering for surveying, environmental analysis, civil and structural engineering, electrical, mechanical and plumbing, and landscape architecture.
iv. Include the application of necessary clearances and permits such as Department of Public Works (DPW), Guam Environmental Protection Agency (GEPA) and other local government agencies as required.
v. Consultant shall respond to RFIs, review and approve shop drawings and material submittals.
vi. Perform other required services as necessary and as determined by the Port Engineering Division.

5) Deep-Draft Wharf and Fill Improvements Project Feasibility Study

On July 2007, the Port in coordination with the US Army Corps of Engineer submitted a Draft Environmental Impact Statement (DEIS) supporting an aggressive Master Plan modernization Project that proposes to: 1) construct a new 1,500 linear foot deep-draft wharf along the Glass breakwater in Apra Harbor and 2) fill approximately 17 acres of reclaimed land in three (3) shallow embayments within Apra Harbor.

The proposed Project would provide modern berthing facilities capable of accommodating the newest generation of large deep-draft container and break bulk vessels as well as large passenger cruise ships and provide additional backland area for future cargo container storage and operations. The proposed Project would also provide contingency berthing facilities for US Navy military vessels, including the most modern classes of aircraft carriers.

Pursuant to NEPA requirements, the DEIS identified and evaluated a range of proposed reasonable alternatives to accomplish the purpose of and the need for the proposed Project, and to evaluate potential effects that the alternatives may have on the surrounding environment.

The Record of Decision (ROD) was never signed and as such a Final EIS was never released. For the record, the US EPA performed its review and rated the DEIS as Environmental Objections – Insufficient Information (EO-2).
The following objectives will be addressed by this task:

a) Consultant will work with the Port to perform a Feasibility Study on the financial and operational impact of the Project to the Port.
b) Consultant will review and assess the July 2007 DEIS and make recommendations on best approach to perform a new Environmental Impact Statement, if prudent.
c) Consultant will review and assess the need for the Project and provide recommendations that may support and enhance the Port's chances of an updated EIS to be issued supporting updated alternatives and mitigation plans for the Project.
d) Consultant will review and assess the Project objectives and update as necessary based on current Port needs, both short

and long term.

e) Consultant will work with Port Management on potential considerations for:

i. Bond Financing

ii. Impact to Port Tariff

iii. Private-Public Partnerships

f) Consultant will perform other project-related tasks as determined by Management and as necessary.

Please attach any additional supporting documents (PDF Only)

PAG_Graphic.pdf
92 KB - 07/24/2019 23:32

Timeline_Details.pdf
80.9 KB - 08/23/2019 09:56

Total Files: 2

Budget

Salary and Fringe

Position	OEA Salary	Non-Federal Salary	OEA Fringe	Non-Federal Fringe	Total Salary	Total Fringe	Total

Total Personnel

	OEA Funds	Non-Federal Funds	Total
Total Salaries + Fringe Benefits	**$0**	**$0**	**$0**

Travel

Description	Local/Out-of-Area	OEA Funds	Non-Federal Funds	Total

Equipment

Description	OEA Funds	Non-Federal Funds	Total

Supplies

Description	OEA Funds	Non-Federal Funds	Total

Other Costs

Description	OEA Funds	Non-Federal Funds	Total
Sub-recipient	**$800,000**	**$0**	**$800,000**
	$800,000	**$0**	**$800,000**

Subtotal Operations

	OEA Funds	Non-Federal Funds	Total
SUBTOTAL OPERATIONS	**$800,000**	**$0**	**$800,000**

Contractual

Description	OEA Funds	Non-Federal Funds	Total

Total Direct Costs

	OEA Funds	Non-Federal Funds	Total
Total Direct Costs	**$800,000**	**$0**	**$800,000**

Indirect

Description	OEA Funds	Non-Federal Funds	Total

Grand Total

	OEA Funds	Non-Federal Funds	Total
Grand Total	**$800,000**	**$0**	**$800,000**

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 01/31/2019

Section A - Budget Summary

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Port Authority of Guam Master Plan Update	12.618	$0.00	$0.00	$800,000.00	$0.00	$800,000.00
2.		$0.00	$0.00	$0.00	$0.00	$0.00
3.		$0.00	$0.00	$0.00	$0.00	$0.00
4.		$0.00	$0.00	$0.00	$0.00	$0.00
5. Totals		$0.00	$0.00	$800,000.00	$0.00	$800,000.00

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Prescribed by OMB (Circular A -102) Page 1

Section B - Budget Categories

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY Federal Grant Program, Function or Activity (1)	Non Federal Grant Program, Function or Activity (2)	(3)	(4)	Total (5)
a. Personnel	$0.00	$0.00			$0.00
b. Fringe Benefits	$0.00	$0.00			$0.00
c. Travel	$0.00	$0.00			$0.00
d. Equipment	$0.00	$0.00			$0.00
e. Supplies	$0.00	$0.00			$0.00
f. Contractual	$0.00	$0.00			$0.00
g. Construction	$0.00	$0.00			$0.00
h. Other	$800,000.00	$0.00			$800,000.00
i. Total Direct Charges (sum of 6a-6h)	$800,000.00	$0.00			$800,000.00
j. Indirect Charges	$0.00	$0.00			$0.00
k. TOTALS (sum of 6i and 6j)	$800,000.00	$0.00			$800,000.00
7. Program Income	$0.00	$0.00			$0.00

Section C - Non-Federal Resources

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.	$0.00	$0.00	$0.00	$0.00
9.	$0.00	$0.00	$0.00	$0.00
10.	$0.00	$0.00	$0.00	$0.00
11.	$0.00	$0.00	$0.00	$0.00
12. TOTAL (sum of lines 8-11)	$0.00	$0.00	$0.00	$0.00

Section D - Forecasted Cash Needs

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$0.00	$0.00	$0.00	$0.00	$0.00
14. Non-Federal	$0.00	$0.00	$0.00	$0.00	$0.00
15. TOTAL (sum of lines 13 and 14)	$0.00	$0.00	$0.00	$0.00	$0.00

Section E - Budget Estimates of Federal Funds Needed for Balance of The Project

(a) Grant Program	FUTURE FUNDING PERIODS (YEARS) SECTION			
	(b) First	(c) Second	(d) Third	(e) Fourth $
16.	$0.00	$0.00	$0.00	$0.00
17.	$0.00	$0.00	$0.00	$0.00
18.	$0.00	$0.00	$0.00	$0.00
19.	$0.00	$0.00	$0.00	$0.00
20. TOTAL (sum of lines 16 - 19)	$0.00	$0.00	$0.00	$0.00

Section F - Other Budget Information

21. Direct Charges:

22. Indirect Charges:

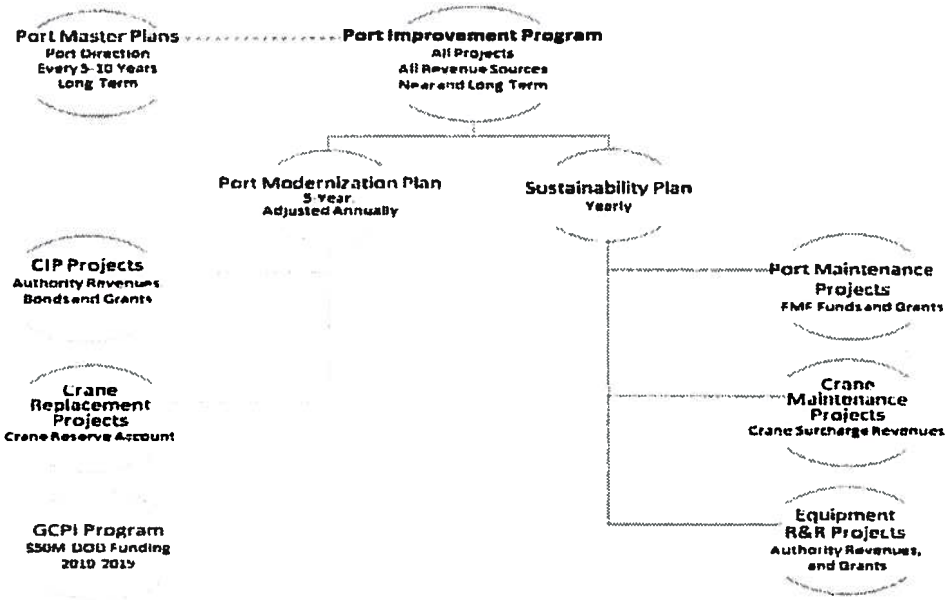
23. Remarks:

Port of Guam

Improvement Program

And

Port Modernization and Sustainability Projects



Timelines/Milestones	Start Date	Completion Date
1. **Anticipated Notification of Grant Award**	September 1, 2019	September 30, 2019
2. **Post Award Activities to include, but not limited to:** - Office of the Governor/PAG coordination for MOU - MOU Review by the Attorney General's Office - Approval of Task Order by the PAG Board of Directors - Approval of Task Order by the Public Utilities Commission	October 1, 2019	January 31, 2020
3. **PAG Issuance of Task Order to OAE**	February 1, 2020	February 15, 2020
4. **12-month Period of Performance** - Program Management and Coordination - 2020 Master Plan Update - Guam Customs Inspection Feasibility Study - Conceptual Planning and Development of SOW for A&E Design Services of the New Admin. Bdlg Annex & Renovation of the Existing Admin. Bdlg - Deep-Draft Wharf and Fill Improvements Project Feasibility Study	February 16, 2020	February 28, 2021
5. **Final Drawdown and Grant Close-Out**	March 1, 2021	May 31, 2021

8. Will comply, as applicable, with the provisions of the Davis Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

19. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Antonio M. Sablan	Governor's Chief of Staff
APPLICANT ORGANIZATION	DATE SUBMITTED
Government of Guam	07/19/2019

Standard Form 424B (Rev. 7-97) Back

CERTIFICATION REGARDING LOBBYING

Certification for Contracts Grants Loans and Cooperative Agreements

The undersigned certifies 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 an agency a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection 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 of Lobbying Activities," 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

Statement for Loan Guarantees and Loan Insurance

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

If 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 of Lobbying Activities," 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

* APPLICANT'S ORGANIZATION

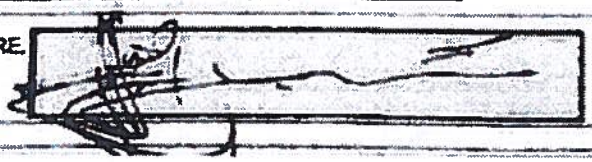
Government of Guam

* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: Mr. * First Name: Anthony Middle Name: M.

* Last Name: Babauta Suffix:

* Title: Governor's Chief of Staff

* SIGNATURE:  * DATE: 07/25/2019

Tax Delinquency and Felony Convictions Representations

(1) The applicant represents that it is ___ is not X a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

(2) The applicant represents that it is ___ is not X a corporation that was convicted of a felony criminal violation under any Federal law within the preceding 24 months.

NOTE: If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the agency suspension and debarment official (SDO) has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore should provide information about its tax liability or conviction to the agency's SDO as soon as it can do so, to facilitate completion of the required consideration before award decisions are made.

OMB CONTROL NUMBER: 0704-0494
OMB EXPIRATION DATE: 11/30/2019

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Washington Headquarters Services, Executive Services Directorate, Directives Division, 4800 Mark Center Drive, East Tower, Suite 02G09, Alexandria, VA 22350-3100 [0704-0494]. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

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PORT AUTHORITY OF GUAM
2019 OWNER'S AGENT ENGINEER (OAE) SUPPORT SERVICES
MASTER PLAN UPDATE
GRANT APPLICATION BUDGET JUSTIFICATION

The Port intentionally limited the tasks included in this grant application to activities that have the greatest influence on ensuring that the Department of Defense assistance is soundly invested and the PIP advances efficiently, while ensuring that port operations and cargo handling capability in support of the status quo, organic growth, and the military realignments and build-up are sustainable.

Total program of assistance request is $800,000.00.

	OAE Technical Assistance Description	Calendar Year 2019	Calendar Year 2020
1	Program Management & Coordination	$ 25,000.00	$ 175,000.00
2	Update of the 2013 Master Plan	$ 25,000.00	$ 260,000.00
3	Customs Inspection Feasibility Study	$ 20,000.00	$ 55,000.00
4	A&E Design Scope Revision for the New Admin. Building Annex and Renovation of the Existing Admin. Building	$ 40,000.00	-0-
5	Deep-Draft Wharf and Fill Improvements Project Feasibility Study	$ 20,000.00	$ 180,000.00
	Total:	**$130,000.00**	**$670,000.00**

Notes:

1. Non-Federal Match is in accordance with 48 USC Sec. 1469a – exemption for the Territory of Guam.
2. There will be a single Budget Line item for the Grant Application; Other for $800,000. Other is being used since the Port Authority of Guam will be the Sub-Recipient to the Grant Award.
3. The Port Budget Table included in the Grant Application is provided to enhance transparency and understanding on the projected expenses for each task.
4. The aforementioned proposed budget estimates are the Port's planning stage estimates. Individual task budgets may be revised and/or adjusted pending the Port's negotiations on each task, with its OAE. The Port will inform the OEA on the results of the Port-OAE negotiations.
5. The Port Authority of Guam (PAG) Budget Estimate was derived from the PAG's previous and recent estimates and negotiations on the Owner's Agent Engineer (OAE) Contract.
6. All Territory (Government of Guam) procurements using Federal Assistance are in accordance with applicable Territory (State) laws and regulations and applicable Federal laws and standards and comply with 2 CFR Part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Award."

7. Absent OEA's program of assistance, the Office of the Governor, the Government of Guam, and the PAG do not have the resources to carry out this activity. The Government of Guam and the PAG do not have the financial resources available to support the ongoing unfunded requirements generated by the DOD Program.

Attachment

4. Bond Project – H-Wharf Rehabilitation Project, December 12, 2019

PORT OF GUAM
ATURIDAT I PUETTON GUAHAN
Jose D. Leon Guerrero Commercial Port
1026 Cabras Highway, Suite 201, Piti, Guam 96925
Telephone: 671-477-5931/35 Facsimile: 671-477-2689/4445
Website: *www.portguam.com*

Lourdes A. Leon Guerrero
Governor of Guam
Joshua F. Tenorio
Lieutenant Governor

December 12, 2019

MEMORANDUM

TO: Board of Directors

FROM: Rory J. Respicio, General Manager

SUBJECT: Bond Project – H-Wharf Rehabilitation Project

Hafa Adai! As you are aware, the Port has been working closely with its WSP/Owner Agent Engineer (OAE) in addressing the environmental permitting requirements for the H-Wharf project. There are three components either pending or currently under review: 1) Construction Management RFP under review by SAAG; 2) Pending WSP's completion of coral relocation work; and 3) Pending EPA water quality permit issuance.

On December 6, 2019, WSP had provided a revised scope of work for the coral relocation services which is required prior to construction of the H-wharf rehabilitation project. Such services provides the following:

- **Coral Relocation Plan.** A plan that outlines the coral removal, handling, transporting, and reattachment methods to be utilized, the approximate number and coral species to be relocated, coral size range, the locations of coral recipient sites, and potential post-relocation monitoring protocols.
- **Coral Relocation.** A dive team orientation of survey of the wharf face will be conducted to confirm the size, health, and positions of potential coral colonies for relocation activities, followed by a delineation and marking of the coral recipient (reattachment).
- **Coral Colony Monitoring.** A monitoring plan will be prepared to delineate the subsequent coral relocation success monitoring program. The coral colonies will be tagged for health and survival monitoring.
- **Invasive Octocoral Species Survey.** Growth samples of what may potentially be invasive will be collected, photographed and preserved. These specimens will be submitted to Department of Agriculture for identification confirmation.

In light of this, the cost estimate for the coral relocation services requires a budget of $482,700.00. Therefore, Board approval is being requested to utilize Bond funds earmarked for Contingencies in this amount.

I am available for any questions you may have.