2013 U.S. Department of Transportation National Infrastructure Investment TIGER Discretionary Grant

Name of Applicant: Port Authority of Guam

Project Title: Container Yard Drainage and Pavement Repair

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CFDA NO.: 20.933 National Infrastructure Investments	AREA: Rural	DUNS NO.: 779911338

2013

REQUESTED AMOUNT: $ 3,657,397.44

TOTAL PROJECT COST: $ 3,657,397.44

PROJECT WEB ADDRESS: http://www.portguam.com/tiger-cy-drainage-and-pavement-repair

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The Port Authority of Guam, hereinafter called the PAG or the Port, is privileged to have the opportunity to submit its application to the US DOT's TIGER Discretionary Grant Program for funding consideration.

The **Container Yard Drainage and Pavement Repair Project** contained herein is a stand-alone, port capital improvement project that complements a larger and more comprehensive Port Modernization Program (PMP), which has been structured to support both an expected military buildup on Guam and long-term organic population growth on Guam.

While the modernization initiative has been supported by Guam legislation and found to be consistent with overall Guam Mast Plan objectives, PAG capital improvement projects and portions of the program remain an unfunded mandate due to the unpredictable nature of the pace of the military buildup and the associated increased cargo generating revenues. This presents both a problem and a unique opportunity to help the Port "get out in front of" the military buildup when it otherwise may not be able to so without TIGER funding.

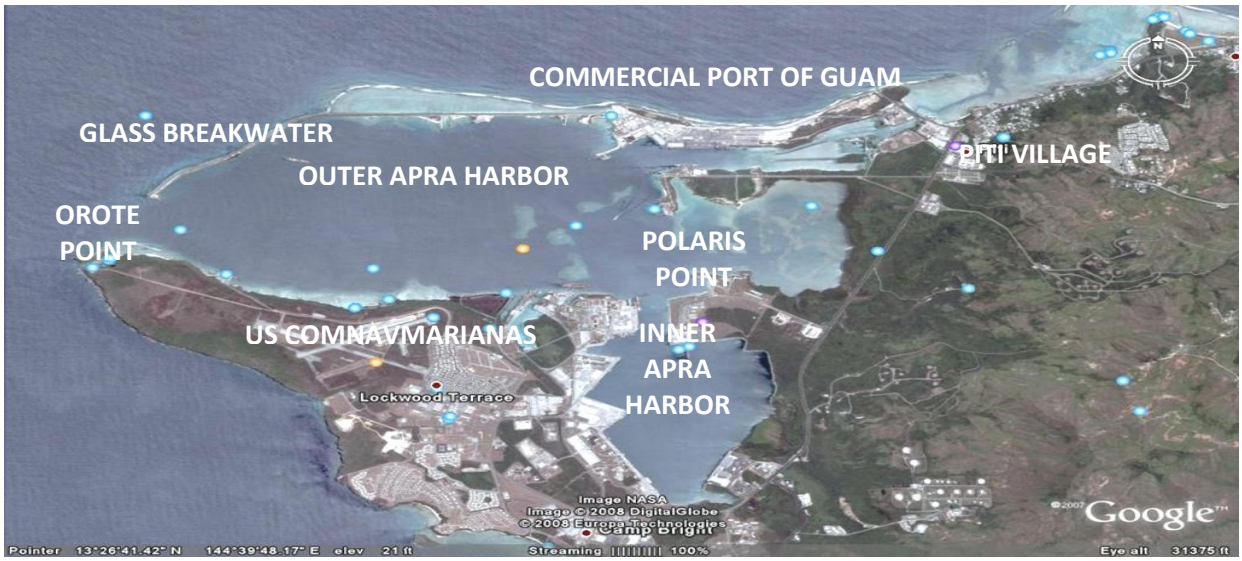
Background:

The PAG is a legal public corporation and an autonomous instrumentality of the Government of Guam. Located at the Outer Apra Harbor area and as the US 16th commercial strategic seaport, the Port is the only commercial cargo handling marine facility on the island. As the primary seaport in Micronesia, it serves as a transshipment point for the entire Western Pacific region, to include the Commonwealth of the Northern Mariana Islands (CNMI), Palau, and the Federated States of Micronesia (FSM.) In addition to playing a major role for these islands, the Port performs a crucial and indispensable role in the lives of Guam's civilian and military population. Over 90% of the day-to-day goods and supplies consumed by its constituents pass through the Port.

The Port is dedicated to providing full services to ocean vessels in support of loading and unloading cargo for Guam and Micronesia. It serves as the main lifeline for transporting consumer goods into the island, and as such, recognizes its responsibility to deliver these goods in a timely and efficient manner. In support of this mission, the Port also leases land and infrastructure to private entities to further develop the maritime industry on Guam. As a public

corporation, it dedicates all of its profit to the upgrading of equipment and facilities that are vital in supporting sustainable and efficient operations.

The Port is equipped to handle the diversified mix of containerized, break bulk, aggregate, fish, and passenger traffic industries. It is on one of the shipping routes currently served by the Jones Act carriers, namely Matson Navigation. These carrier vessels sail from the mainland west coast area (Matson stopping by Hawaii) and continuing on to Guam. Transshipment cargoes destined for the CNMI, Palau, and FSM are offloaded from these vessels to the Port and then loaded onto feeder vessels that performs the delivery to the respective island destination.

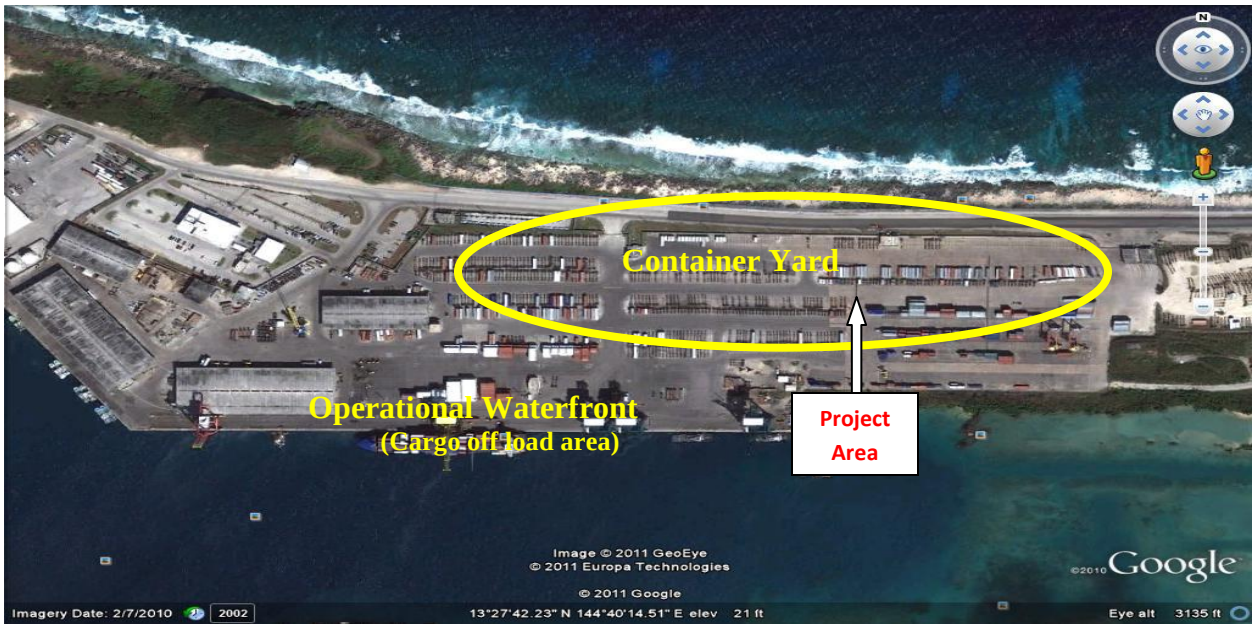


I. Project Description: Container Yard Drainage and Pavement Repair

Current Port Operation Challenges

Since its initial construction, the existing container yard pavement and drainage systems have remained largely unchanged. The pavement in various areas is rapidly deteriorating and the drainage deficiencies that come with pavement subsidence needs correcting. The combined work of repairing pavements and correcting drainage deficiencies presents a unique opportunity to simultaneously upgrade surface runoff (storm water) treatment.

Pavement deterioration is caused by evolving operations and the associated changes to cargo handling equipment used at the Port. This evolution has involved the somewhat restricted use of straddle hoists and rubber gantry cranes and progressed to the less restricted use of high-wheel-load top loaders, side loaders, and 20-ton forklifts. This equipment mix evolution was driven by the needs of hybrid (both grounded and wheeled storage) container operations and RoRo (Roll on Roll Off) break-bulk operations.



Unlike previous operations, which restricted heavy activities to an area of the container yard that was hardened for this purpose, the hybrid operation has created heavy cargo traffic in areas of the container and break-bulk yards that were not designed for these weight and usage levels. Consequently, this has resulted in accelerated degradation of the container yard surface and pavement subsidence that has contributed to surface ponding and lost conveyance efficiency for the drainage systems.

Current Condition

The dilapidated condition of the drainage system and pavement surface requires Port container handling equipment operators and commercial truckers to re-route access to the container yard to avoid seriously damaged areas.

With the yard configuration required to support an expanded break-bulk facility and retention of hybrid operations, comes a continuing and expanded requirement to place high traffic demands on existing pavements. These pavements need to be structurally sound and adequately drained, and these critical repairs and upgrades must be made.


HORIZON
LINES


Matson
GESeaco


Matson

Proposed Solution

The Port proposes to implement repairs to damaged areas in the container yard to include pavement restoration of asphalt and concrete exhibiting serious deterioration. Such patches will require surgical removal of both asphalt and concrete with subsurface improvement and replacement of a new structural pavement section. Repair work would require the removal of existing concrete supports for the drainage gates and modifications to the drainage trough to support new gates. In addition, the work will be conducted subsequent to the installation of oil-water separators and/or cartridge filtration vaults in the existing main storm water trunk lines leading to waterfront outfalls into Apra Harbor.

Benefits

This repair project will mitigate and significantly reduce wear and tear on pavements and equipment. It will also improve storage load capacity, safe container handling and stacking, equipment routing. This will in turn promote the safe transport of hazardous and oversized cargo within the terminal break-bulk and container yards.

Repairs will also expedite the port's capabilities and responses to conversions from chassis operations to grounded operations, as needed, based on cargo/shipper demands, and increase the Port's response capabilities for Strategic Port designation requirements.

The project, by connecting with the oil-water separators to be installed, will also mitigate the existing potential for the release of oil contaminants in the waterfront outfalls and upgrade environmental sustainability operations.

Lastly, the project will enhance flexible use of the terminal yards in support of hybrid operations and varying volumes associated with periodic cargo surges.

To ensure that TIGER funding is well spent, the Port, through a bid solicitation process, will work with its Contractor to design, build, and complete a facility that will be compliant to Maritime Security Regulations and Critical Infrastrucure Requirements. Provided below are the scopes of work for 3 components of this project:

The projected cost includes all Design-Build expenses that will be incurred by the Contractor during the 18-24 months performance period. Project activities that are required but not limited to are: A/E design fees, project inspection fees, site work, demolition and removal activities, construction, construction management, administrative & legal fees, and all other related fees indicated in the preliminary Scopes of Work.

Port Modernization Program Project

DESCRIPTION	TYPE OF WORK	QUANTITY	UNIT	RAW COST
Container Yard Drainage & Pavement Repair	Renovation	11,000	SF	$ 2,241,875.00
SUBTOTAL RAW COST				**$ 2,241,875.00**
COST ADJUSTMENT FACTORS				**TOTAL COST**
SUBTOTAL				**$ 2,241,875.00**
1. Area Cost Factor Adjustment				$ 59,185.50
SUBTOTAL				$ 2,301,060.50
2. Supervision, Inspection & Overhead				$ 149,568.93
SUBTOTAL				$ 2,450,629.43
3. Contingency				$ 735,188.83
TOTAL 1				$ 3,185,818.26
4. Planning and Design				$ 223,007.28
TOTAL 2				$ 3,408,825.54
MARAD (3%)				$ 102,264.77
TOTAL 3				$ 3,511,090.31
Guam Receipt Tax (GRT) (4.167%)				$ 146,307.13
TOTAL CONSTRUCTION COST (FY 2013)				**$ 3,657,397.44**
TOTAL PROGRAM COST				**$ 3,657,397.44**

COST ADJUSTMENT FACTORS	% AMOUNT
1. Area Cost Factor	2.640
2. Supervision, Inspection and Overhead (SIOH) Factor (%)	6.500
3. Contingency Factor (%)	30.000
4. Planning and Design Factor (%)	7.000

A project budget of how the raw costs will be spent can be found in the "Grant Funds and Sources/Uses of Project Funds" section on page 15 of this narrative.

SCOPE OF WORK for Container Yard Drainage and Pavement Repair

This project is to repair the dilapidated concrete storm drainage system in the container yard. Cast in place concrete mix shall have a compressive strength of 6000 psi.

All system shall meet the standard compliance of organizations for the American National Standard Institute (ANSI), American Society for Testing & Materials (ASTM), Underwriter Laboratories (UL), American Concrete Institute (ACI), American Welding Society (AWS) and the Occupational Safety & Health Association (OSHA).

The Port Authority of Guam shall award this project through a competitive bidding. Duration for this project is Ten (10) months from the Notice to Proceed, beginning with the removal works to

the completion and acceptance of the project by the Port Authority of Guam. The contractor must be the prime bidder for this project that meets the Port requirement. Bid will be lump sum cost.

A) UP-GRADE PARAMETER:

1. Attach is the existing concrete storm drain channel system design inside the Port container yard compiled by PAG Engineering/CIP Division for bidding purposes (approx-2,240 LF);
2. The contractor that is awarded on this project shall obtain the services of a structural engineer licensed by the PEALS Board of Guam, to affix seal, sign drawing plans, & to compute the safe load bearing concrete storm drain channel system;
3. Contractor to submit drawing plans on the concept design by PAG. Plans shall meet all Government of Guam regulatory requirements for a building permit issuance;
4. Contractor to work with the license engineer's evaluation as per PAG recommendations on the repaired concrete storm drain channel system;
5. Drawing plans shall have but not be limited to the following:
   a) Title sheet, vicinity map, project location and index of drawings;
   b) Drawings shall indicate the complete storm drain channel runs and outfalls;
   c) Cast in place concrete shall have a 28 day compressive strength of 6000 psi, ¾" aggregate size, & a 2" maximum slump, unless indicated or specified otherwise.
   d) Reinforcing bars shall be ASTM A615M, Grade 60 unless otherwise specified. Top loader equipment & container have a combine minimum weight of 234,000 pounds;
   e) Specifications and general notes can be indicated on the drawing plans. This project must conform with the ANSI, ASTM, UL, ACI, AWS, & OSHA requirements;
   f) Port's Engineering/CIP Division shall review the drawing plans at 65%, 100% & final. Submit Four (4) sets of drawing plans for review. Upon approval of the final drawings, contractor shall apply for a DPW Building Permit. Drawing plans and building permit has Sixty (60) calendar days for these works to be completed;

B) **REPAIR PHASE:**

1. Contractor awarded this project shall submit the required Performance & Payment Bonds before the Notice To Proceed shall be issued. Upon completion of the drawing plans and approval by PAG, the contractor shall obtain a DPW Building Permit prior to starting of work;
2. Contractor's personnel assign to this project are required to have a Transportation Worker Identification Credential (TWIC) card and a mandatory attendance for a MARSEC Level briefing. Inquire the Port Police Office for these requirements;
3. Contractor to submit insurance coverage on Comprehensive General Liability, Excess Liability Policy (1M minimum), Workers Compensation & Employer's Liability, and Builder's Risk. PAG shall be the additional insured;
4. Contractor shall submit the Submittal Status Log, Schedule of Values, Phasing Plan, and Construction Schedule to PAG Engineering/CIP Division for approval. Contractor has Twelve (12) months or Three Hundred Sixty Five (365) calendar days after the DPW Building Permit approval date to complete this project;

5. Contractor shall be responsible on all measurements. PAG shall not be held liable for contractor's miscalculations, under estimations and assumptions once the project is awarded;
6. Contractor to work with the engineer's evaluation design as per PAG recommendation on the concrete storm drain channel repair. Concrete storm drain channel shall be capable to withstand a minimum 234,000 pounds weight (top loader & container) traversing container yard;
7. Contractor shall abide with OSHA regulations and provide temporary barriers with safety warning signs around the work area for the safety of working personnel inside Port premises;
8. Contractor shall coordinate all work with the Port's Engineering/CIP Division & the Terminal Operations. Contractor to work around with the Port's terminal activities in order not to hamper the Container Yard operations;
9. Contractor shall provide labor, materials & equipment for the repair of concrete storm drain system as per approved drawing plans and conform to specifications. PAG Engineering personnel shall conduct daily inspection of the project;
10. Contractor to remove existing steel gratings, saw-cut concrete channel wall base prior to chipping-off concrete drain channel walls. Expose vertical reinforcing bars to accommodate 42D lap minimum with the new reinforcing bars. New vertical reinforcing bars shall be drilled 6" deep on the removed channel wall, in-level with the existing concrete channel's finish grade. Provide epoxy anchor grout for the new vertical reinforcement bars (see attach shop drawings);
11. Contractor to lay-out vertical & horizontal reinforcing bars & provide formwork. Reinforcing bars shall be ASTM A615M, Grade 60 unless otherwise specified. Request formwork inspection to PAG Engineering Office prior to concrete pouring;
12. Contractor to apply concrete bonding on existing concrete surface in contact with the new concrete mix. Pour ready mix concrete on formwork (approx-1,543 cu.yd.). Ready mix concrete shall have a compressive strength of 6000 psi in 28 days. Contractor to provide vibrator while pouring ready mix concrete. Submit copy of the concrete trip ticket to PAG Engineering Office;
13. Contractor shall be responsible for daily clean-up of project vicinity. Construction debris shall be disposed to a designated DPW dump site. Remove steel gratings shall be re-use and to be put in-place upon completion on the repaired storm drainage system;
14. PAG shall process a monthly billing statement on this project with a 10% retention, to be release upon completion of project. Monthly billing shall attach the Billing Invoice, Cost Breakdown, Schedule of Values and Purchase Order;
15. Request in writing for final inspection to PAG Engineering/CIP Division;
16. Upon completion of all punch list, contractor shall submit the final billing with the As-Built Drawings in hard copy & electronic file in PDF format, Certificate of Completion, Warranty Certificate, & Release of Liabilities to the Port Authority of Guam associated with this project.

SCOPE OF WORK FOR CONCRETE PAVEMENT REPAIR:

(Located @ Container Yard Area R, X, Y, and Z)

1. Contractor to inspect site and verify drawing plans for buried utilities prior to submitting the cost proposal. Cost proposal shall include a schedule of values on labor, materials equipment and company/overhead mark-ups. Any additional work costing shall reflect the submitted schedule of values.
2. Contractor shall provide all materials, labor and equipment for backfill and concrete pavement repair (approx- 6,826 sq.ft.).(see attached measurements in different location in container yard area "R", "X", "Y" and "Z";
3. Contractor shall be responsible on all actual field measurements and locations of the attached damage area. PAG shall not be held liable for contractor's miscalculations, under estimations and assumptions once the project is awarded;
4. Contract time for the project is One hundred Eighty (180) calendar days upon issuance of Notice to Proceed;
5. Contractors are required to have a Transportation Worker Identification Credentials (TWIC) card and a mandatory attendance for a MARSEC Level briefing. Inquire Port Police Office for these requirements;
6. Contractor to submit a copy of insurance liability coverage of One (1) Million dollar as requirement by the Port Police Section to secure pass for personnel, company vehicles and equipment. Submit requirements Seventy Two (72) hours
   before start of work;
7. Contractor shall abide with OSHA regulations and provide safety warning signs with temporary barriers within work area for the safety of working personnel inside Port premises;
8. Contractor to saw-cut concrete pavement in straight line along the damage areas.
   (approx- 6,826 sq. ft. located in different areas , see attached);
9. Maintain existing reinforcing bars length of 40D splicing from cut concrete for lapping with new #4 bars;
10. Excavate and remove existing backfill materials Twenty (20") inches deep. (approx- 5,056 cu. yd);
11. Contractor to clean work area daily. Remove concrete slabs, rebars, back fill materials and other construction debris and dispose them to a designated DPW dumpsite;
12. Contractor to backfill new base course and sub-base course and pave as indicated in shop drawing. New base course and sub base course shall be 100% compaction at 4" lifts (approx. 5,056 cu. yd.);
13. Engineering/CIP Division shall determine a minimum of 12 test locations. Submit compaction test result to Engineering office;
14. Contractor shall lay-out # 4 bars on new concrete slab (see attached);
15. Inform Engineering/CIP Division for formwork inspection prior to concrete pouring. Provide concrete bonding to existing concrete pavement;
16. Contractor to follow concrete pavement details. Concrete slab on grade shall be 6,000 psi (f'C). Reinforcing bars shall have a minimum of 40D splice; and shall be staggered position.

17. Provide construction joints to match existing concrete pavement. Any disturbed areas affected shall be restored to its original condition and no cost to PAG (see attached);
18. Contractor to clean work site daily and dispose all construction debris/rubbish to a designated DPW site;
19. Provide temporary barrier with sign around new concrete pavement during curing time;
20. Contractor to request in writing to the Engineering/CIP Division for final inspection;
21. PAG shall process a monthly billing statement on this project with 10% retention, to be release upon completion of the project. Attach billing invoice, schedule of values and a copy of purchase order;
22. Upon completion of all punch list, Contractor to submit a Certificate of Completion, Warranty Certificate for a period of One (1) year for materials & workmanship and Release of Liabilities to the Port Authority of Guam associated with this project;

Owner's Responsibilities (PAG):

1. Owner to provide access to worksite;
2. Engineering/CIP Division to monitor/inspect project;
3. Approve/disapprove change order and material substitutes;
4. Liquidated Damages as per government regulations shall be imposed for delaying project;

Below are the Quantity and Measurements for the Repair of Container Yard Concrete Pavement.

AREA Z

1) 8 'x 20' and 20' x 25' = 660 sq. ft.
2) 20' x 25' and 20' x 25' = 1,000 sq. ft.
3) 20' x 25' and 8' x 20' = 660 sq. ft.
4) 8' x 25' and 4' x 40' = 360 sq. ft.
5) Right of hole 2, 4' x 8' and 4' x 8' = 64 sq. ft.
6) Left of hole 3,a) 8' x 20' and 8' x 10', B) 8' x 8' and 8' x 8' = 368 sq. ft.

Total of Area Z: 3,112 sq. ft.

AREA R – right side of lamp post

1) 5' x 8' and 4' x 8' = 72 sq. ft.
2) 10' x 25', 10' x 20' and 8' x 20' = 610 sq. ft.
3) 8' x 20', 8' x 20', 8' x 20' and 8' x 20' = 640 sq. ft.
4) 25' x 20' = 500 sq. ft.
5) 8' x 20' and 8' x 20' (hole is on other side of area) = 320 sq. ft.
6) 12' x 25' and 4' x 25' (hole is on other side of area) = 400 sq. ft.

Total of Area R: 2,542 sq. ft.

BETWEEN AREA Y & X

1) 4' X 20' and 8' X 20' = 240 sq. ft.
2) 8' x 20' and 8' x 20' = 320 sq. ft.
3) 16' x 18' and 8' x 12' = 384 sq. ft.
4) 14' x 4', 9' x 4' and 10' x 4' (this is area around water valve manhole cover) = 132 sq. ft.
5) 8' x 12' (alongside #4 cover) = 96 sq. ft.

Total of Area X and Y ; 1,172 sq. ft.

Total Area of Concrete Pavement Repair in Area R, X, Y and Z : 6,826 sq. ft.

SCOPE OF WORK FOR ASPHALT PAVEMENT REPAIR:
(Container Yard Area"Y", east side of the Storm drain channel in area 'Y")

1) Contractor shall inspect site and verify drawing plans for buried utilities prior to submitting the cost proposal. Cost proposal shall include a schedule of values on labor, materials, equipment & company overhead/mark-ups. Any additional work shall reflect the submitted schedule of values;
2) Contractor shall provide materials, labor and equipment for the repair of damage asphalt pavement (approx. 11,000 sq. ft.) in Container Yard Area "Y", east side of the Storm drain channel;
3) Contractor shall be responsible on all actual field measurements and locations of the attached damage area. PAG shall not be held liable for contractor's miscalculations, under estimations and assumptions once the project is awarded;
4) Contract time for this project is Sixty (60) calendar days after receipt of Purchase Order;
5) Contractor's personnel assign to this Port project are required to attend the one-time MARSEC Level briefing. Contractor's supervisor/engineer on site shall posses a TWIC card to escort five workers at a time inside the restricted area. Inquire requirements at the Port Police Office;
6) Awarded contractor will be issued a Notice to Proceed/Purchase Order and to submit the required Performance & Payment Bonds;
7) Contractor to submit insurance coverage on Comprehensive General Liability, Excess Liability Policy (1M minimum), Workers Compensation & Employer's Liability, and Builder's Risk. PAG shall be an additional insured. Submit requirements in Seventy Two (72) hours before start of work;
8) Contractor shall abide with OSHA regulations, provide safety warning signs and temporary barrier within the work area for the safety of the working personnel inside Port areas;
9) Coordinate all work with the Engineering/CIP Division;
10) Cut asphalt pavement in straight line on approximate area of 50'x 220'x 4" deep;

11) Contractor to clean work area daily. Removed asphalt pavement, base & sub base course materials and other construction debris shall be dispose to a designated DPW dump site;
12) Contractor to backfill and pave as indicated on shop drawing provided. New base course and sub-base course materials shall be 100% compaction at 4" lifts (approx- 680 yd^3);
13) Contractor shall use compaction roller of two tons minimum;
14) Port engineers shall determine ten test location sites. Five test locations prior to laying the new sub-base course backfill and another five test locations after the new base course backfill;
15) Apply SS-1 prime coat & tack coat moderately prior to laying of new hot mix asphalt pavement (approx- 11,000 ft^2);
16) Lay-out new hot mix asphalt (approx- 136 yd^3). New hot mix asphalt pavement shall be compacted to 98% compaction and shall level with the existing surrounding pavements. Contractor shall provide barriers with flashing lights around new asphalt pavement during the curing period;
17) Contractor to remove barriers & clean area after the new asphalt pavement reach the curing days;
18) It shall be the contractor's responsibility to protect, in place, any utility and/or its structure whether or not shown on the plans. Damage due to the contractor's operations shall be repaired at contractor's expense to current agency standards and no cost to PAG;
19) PAG engineering personnel shall conduct daily inspection of the project;
20) PAG shall process a monthly billing statement on this project with 10% retention, to be release upon completion of the project. Attach Billing Invoice, Schedule of Values and Purchase Order;
21) Contractor to request in writing for final inspection to the Port Engineering/CIP Division;
22) Upon completion of all punch lists, contractor shall submit the final billing with the Certificate of Completion, Warranty certificate, & Release of Liabilities to the Port Authority of Guam associated with this project;

OWNER'S RESPONSIBILITIES (PAG):

1) Owner to provide access to worksite;
2) Engineering/CIP Division to monitor & inspect project;
3) Approve/disapprove change order and material substitutes;
4) Liquidated damages as per government regulations shall be imposed for delaying this project;

II. Project Parties:

Port Authority of Guam: the owner and operator of the Port

Maritime Administration: provides program funding oversight and obligation of Port Modernization Program Funds

Port Users Group (PUG): comprised of shippers and trucking companies and freight forwarders

Pacific and Micronesian Islands Regional Partners: As the transshipment hub of the region, over half a million individuals stand to benefit from funding this project.

III. Grant Funds and Sources/Uses of Project Funds:

Since the project location is in a rural area which qualifies the PAG for 100% funding, the full amount of $3,657,397.44 is being requested. Provided below is a breakdown of the raw costs:

Project Raw Cost Estimates

1. **Container Yard Storm Drain Channel Repair & Replacement of Storm Drain Gratings**

a. Mobilization	$169,806.00
b. Permitting	$127,354.00
c. Demolition	$339,611.00
d. Concrete Work	$339,611.00
e. Gratings	$602,810.00
f. Demobilization	$118,864.00
Subtotal:	**$1,698,056.00**

2. **Container Yard Concrete Pavement Repairs**
Located at Area "R", "X", "Y" and "Z"
(Include labor & materials of 5,728 sq/ft)

a. Mobilization	$31,400.00
b. Demolition	$62,799.00
c. Concrete Work (Form Work)	$197,817.00
d. Demobilization	$21,980.00
Subtotal:	**$313,966.00**

3. **Container Yard Asphalt Pavement Repair**
Located east side of the Storm Drain Channel at area "Y"
(Include labor & materials of 11,000 sq/ft)

a. Mobilization	$22,982.00
b. Demolition	$45,965.00
c. Concrete Work (Form Work)	$137,894.00
d. Demobilization	$22,982.00
Subtotal:	**$229,823.00**

TOTAL Raw Cost: ***$2,241,875.00***

IV. Selection Criteria

a. Long Term Outcomes

The project described in this application is in line with, and directly supports a broader and comprehensive Port Modernization Program (PMP). The PMP is designed to address both National and Regional objectives. At the national level, Guam is also the "USA in Asia". Three to four hours by air to major Asian centers, to include Japan, South Korea and Hong Kong, the island is of great significance to the Nation's defense posture in this area of the globe, which has also contributed to the Port of Guam's strategic seaport designation by DoD.

As such, the Port is preparing for significant growth attributed to DOD plans for a reduced military buildup on Guam. This growth involves: 1) the influx of Marines and their dependents, 2) the cargo associated with supporting military construction, 3) the island-wide infrastructure improvement to utilities and roads, and 4) the increased demand for everyday consumer goods. At the regional level, the Port is addressing sustainability (capital plan replacement) concerns for aging facilities and preparing for the long-term organic growth of non-military portions of the population of Guam and surrounding islands.

As the Port balances its preparations to meet both its National and Regional objectives, it must construct facilities at an accelerated pace controlled by available funding and cash-flow that is largely dependent on overall projected cargo flow and related revenues. Because the island's organic growth will take 30-40 years to materialize, early Capital Program Investment must be supported by placing a primary emphasis on national objectives and relying on funds and revenue created by a combination of increased military cargo flow, federal grants, and tariff adjustments to support limited affordable borrowing.

The improvements described in this application will enhance safety and efficiency and support sustainability activities that will expand equipment maintenance and repair functions.

i. State of Good Repair:

Capital Asset Conditions

The Master Plan has revealed that many Port assets and systems have outgrown their intended useful life and purpose. These assets must either be demolished, expanded, renovated, or supplemented. Some of these requirements are addressed in the funded portion of Port's Master Plan Upgrade. Unfunded portions, as well as other capital improvement projects such as this Container Yard Drainage and Pavement Repair project are being sought after by grant applications. This project, combined with infrastructure improvements to restore facilities service capability and code compliance, will serve to modernize and improve operations efficiency, flexibility, safety and capacity.

Following the execution of a strategically thought out modernization plan in collaboration with MARAD, the PAG will identify annual maintenance and sustainment capital for all retained, renovated, or supplemented facilities and address these requirements in the Port's future annual operating budget.

Container Yard

The last container yard paving maintenance was performed in 1990-1991, except a portion behind berth F-5 that was retrofitted in 1997 after earthquake damage. Since then, no major repair has been performed in the yard area leaving it in poor condition with visible cracks and extreme wear and tear. The yard pavement rehabilitation is necessary to facilitate storm water management improvements. It is also necessary to upgrade or restore pavement capacity in heavily trafficked areas to improve the paving for top-pick (top loader) and side-pick (side loader) container handling equipment with extremely high operating wheel loads.

Capitalization of Assets

The economic benefits and additional revenues that these improvements will generate will improve the PAG's financial stability through increased operational activities and reduced equipment maintenance and repair costs. The repaired container yard will contribute to increased operating flexibility and revenue generating potential by deploying reliable and well maintained equipment that will improve the handling of containerized and break-bulk cargo. This added capability will in turn allow the Port to better serve Guam's island residents, the private sector, the military, and the surrounding Pacific islands region by providing flexibility in cargo handling and continuity of operational equipment at the Port of Guam.

ii. Economic Competitiveness:

Effectiveness of the Port of Guam

The pavement and drainage repair projects in the Port of Guam Container Yard will improve both near- and long-term efficiency, reliability and cost-competitiveness in the movement of goods to and from Guam and throughout the surrounding area, including to the Commonwealth of the Northern Mariana Islands (CNMI), the Federated States of Micronesia (FSM), the Republic of Palau, and the Republic of the Marshall Islands (RMI).

These projects are essential in delivering and sustaining the DOD buildup on Guam. Without these projects, the DOD buildup and supply of cargo to the local population and the regions will be severely constrained because the current Port situation simply cannot handle the expected increase in cargo volume.

Even without the military buildup, the Port is reaching capacity to serve its existing markets, and in the near future, if left unimproved, will be incapable of meeting the local demand on Guam as previously mentioned.

Operational Cost Savings

The execution of these projects will significantly improve the efficiency of the break-bulk and container terminals. A detailed model of port operations was developed to assess how cargo operations (containerized and break-bulk) utilize key components of the terminal under current conditions as compared with improved conditions. The improvements will generate cost savings as follows:

- ***Reduction on Wear and Tear of Cargo Handling Equipment***: This repair project will significantly reduce wear and tear on equipment handling during the movement of all cargos, and most importantly, promote the safe transport of hazardous materials within the terminal/container yard. The Port has recently invested $3.5 million to purchase cargo handling equipment (i.e. tractors, top loaders), and these repairs will extend the useful life and purpose of all wheeled assets.
- ***Reduced Truck Delays within the Yard and at the Gates***: Trucks will be processed faster and will require substantially less service time inside the yard. Important sub-components include gate queuing time, gate processing time, and yard service time.
- ***Reduced Operating Labor Costs***: Improved facilities will support gate operations and will likewise improve (decrease) the Port's cost of operating the terminal. Important sub-components include truck gate operating hours, container yard grounding service, and vessel stevedoring service (loading and unloading cargo on and off ships).
- ***Maintenance Labor and Capital Costs***: Reductions in equipment operating hours will also lower maintenance costs.

As the Port acquires more state of the art equipment, the need to maintain, repair, and upkeep all its assets will be important. The repairs will allow the Port to quickly perform the necessary services to ensure that critical operations are uninterrupted.

iii. Livability:

Because of its role in the supply chain for all island residents, it has been determined that all Port facilities be maintained and upgraded to address long term sustainability and increasing demands that follow the island's organic growth. Additionally, the Port has to contend with supply demands, infrastructure challenges, and the potential for increased cargo volume traffic due to a DoD-planned military buildup. For the more than half-million people that live in this rural region (covering over 1.5 million square miles), the Port is a critical link to the rest of the world. The improvements achieved through the repair projects will ensure better access to consumer goods, improve cargo delivery from the Port to the consignees, ease maintenance and repair congestion, and lengthen the life of Port equipment and assets due to the improved yard conditions.

Additionally, the Projects could also have a marginal impact on reducing the cost of services in the region (because almost all goods must be shipped to Guam, changes in shipping costs and Port efficiency can impact consumer prices). In an Economically Distressed Area such as Guam, this vital service link takes on added significance.

iv. Environmental Sustainability:

Air Quality, CO2 Emissions, and Fuel Savings

The Port is located in an air quality non-attainment area that exceeds National Ambient Air Quality Standards (NAAQS). As a result, the potential for Port-related emissions

savings are particularly important. One positive impact of the projects once completed is that it will allow trucks to move through the facility with fewer delays and less idling. This goal will be reached progressively as container yard pavement is repaired and improved. Ground operations efficiencies will result in shorter Port Calls for vessels as offloaded or loaded cargo is handled more efficiently within the Terminals.

Storm Water Management

The current 1960s design permits storm water runoff to enter the harbor without treatment. This has been a stated concern of visiting representatives from U.S. EPA, Guam EPA, U.S. Fish and Wildlife, and National Marine Fisheries. The new storm water system improvements will ensure that storm water runoff will pass through the storm water treatment (oil separation and filtration as required) vaults improving the quality of discharge to Apra Harbor.

v. Safety:

The enhanced maintenance and sustainment of equipment capabilities achieved through the repair projects will greatly improve the overall operational safety of the Port. The rehabilitated container yard will minimize traffic congestion and conflict, support the operational life of yard equipment, and reduce the likelihood of accidents. Features such as OSHA-compliant lighting and code-compliant storm water collection systems will also permit safer operating conditions at night and during inclement weather.

vi. Project Readiness:

The Final Environmental Assessment was submitted to MARAD for review and the agency subsequently issued a NEPA Determination of Finding of No significant Impact (FONSI). This notice was published in the Federal Register on November 8, 2012.

b. Innovation

The project site rehabilitation will be used to support island imports, transshipment imports/exports, break-bulk cargo and container cargo, and storage and retrieval of empty containers, full containers, chassis-borne containers and grounded containers.

The Port will partner with its shippers to assure an adequate supply of wheeled chassis owned by the shippers with overflow on-site storage capacity to improve accessibility. The site development geared toward meeting national security needs, national cargo handling demands, and organic growth demands will progress with front end federal support and growing Port borrowing over time as cargo volumes generate the revenue needed to service loans on both a near-term and sustainable basis.

The Port will also come into compliance with the latest storm drain, storm run-off, and outfall filtration systems, which were not in place when the facility was original constructed.

c. Partnership

PAG-MARAD Partnership:

To assist the PAG in its redevelopment efforts toward alignment on National objectives (meeting military buildup cargo demands and assuring stewardship of federal expenditures), the Guam Port Improvement Enterprise Program (PIEF) was established in Public Law No. 110-417 (October 14, 2008). The law reflects Congressional authorization for the PIEF to provide "planning, design, and construction of projects for the Port of Guam to improve facilities, relieve port congestion, and provide greater access to port facilities". Under this same law, the Secretary of Transportation, acting through the Maritime Administrator, has been given the authority to establish and carry out the PIEF with responsibilities that include receiving and managing funding, coordinating NEPA requirements, and coordinating and providing technical assistance for individual PIEF projects.

The partnership between MARAD and the PAG will take the PAG Master Plan and its initial "road map" of key activities and project packages from the planning phase through the design, construction, and operational start-up phases.

Throughout this process, the PAG-MARAD partnership has, and will continue to extend coordination to other Federal (DOD, USDA, EDA, OIA, EPA, USFWS, NMFS) and non-Federal (Guam Legislature, Guam regulatory agencies) entities reviewing PIEF projects for NEPA and program compliance and also address the general stewardship interests of Federal and non-Federal (commercial and private lenders, Guam Public Utility Commission reviewing PAG tariffs/borrowing) parties providing PIEF project funding support in the form of funds transfers, appropriations, commercial loans, grants, PAG bonds, etc. This collaboration between Federal, Territory, and private/commercial entities is unprecedented in scale and was strategically planned to move the Port Modernization Program forward.
The PMP involves an unprecedented partnership between Guam and the Federal Government including MARAD, Department of Defense, Department of Homeland Security, Department of Agriculture, Economic Development Administration, Office of Insular Affairs, Department of Interior, and DOD's Office of Economic Adjustment.

In 2008, the Port signed an MOU with MARAD to share in Program Definition and complete final design and construction. MARAD also served as the Lead Agency for the NEPA Process and acts as the steward and reporting agency for Federal Program Funds collection and disbursement. Other federal agencies have provided grants in support of program definition, site investigation, preliminary planning and engineering, infrastructure improvement and security posture improvement.

Collectively, the partnership is contributing to a workable financial approach that allows the Port to make progress in the face of evolving national program needs, future regional growth requirements, and uncertain cargo growth. The partnership extends to the Governor's Office and Guam Legislature. The Port Modernization

Program (PMP) is consistent with growth management and land-use management for the island. Legislative authorization and oversight of the PMP and Public Utility Commission oversight of Port finances assures that the PMP is consistent with Territorial management and stewardship requirements.

The 2008 MOU outlines the roles of each party to implement the Port Improvement Enterprise Program. According to this MOU, MARAD with the assistance of its PMT will complete the final design of Phase I-A and Phase IB projects after receiving preliminary design documents (drawings, outline specifications, project design requirements report) and other performance requirements included in the Port Modernization Program Implementation Plan, from PAG. As final designs are completed, the PMT initiates applicable solicitations (Invitation for Bids, purchases, Request for Proposals [RFPs]) for all construction related activities. The PMT will oversee execution of construction and assist MARAD with the necessary management interface with the Port and other key stakeholders.

d. Results of Benefit-Cost Analysis

Seaport Cargo handling equipment constitutes the first line of surface transportation in the chain of distribution of goods to island community. There are two primary factors that result in the premature breakdown and degradation of this equipment: over-weight containers, and dilapidated travelling surfaces.

With the assistance of the Department of Transportation's Federal Highways Administration, a new Weigh in Motion Station was completed in February of this year to monitor and deter the over-weight containers from travelling on Guam's roads, which in turn is expected to deter the receipt of such cargo at the initial off-load from cargo vessels.

The current state of a section of the Port's container yard, that transverses the entire horizontal length of an area where containers are staged after vessel off-loading constitutes the second factor leading to premature equipment damage.

Additionally, container yard efficiency, in the Port of Guam's case, can be measured by the limited amount of space available to stage cargo, in relation to the volume of cargo handled. Given that the container yard measures 26.5 acres, and handles approximately 2 million revenue tons annually, Guam's port is efficient. However, the port's efficiency cannot be expected to be sustained in the absence of basic infrastructure conditions to support its cargo handling equipment.

In terms of cost savings to the Port, the scenario below discusses reductions in costs throughout the 20-year Useful Life and Purpose of the repair projects. Based on the 20-year life span, reductions in costs amount to $5.3 million in labor costs associated with equipment repair and maintenance, and a reduction of $35,600 in direct M&R expenditures:

Value of Cost Reductions
20 Year Useful Life and Purpose

	Amount	10% Saving	20 Yrs Span
Labor Cost Value	$ 2,645,815.00	$ 264,581.50	$ 5,291,630.00

	12% Saving	20 Yrs Span
	$ 317,497.80	$ 6,349,956.00

	Amount	2% Saving	20 Yrs Span
1) General Serv Maint	$ 8,000.00	$ 160.00	$ 3,200.00
2) Hyd Hose Replacement	$ 10,000.00	$ 200.00	$ 4,000.00
3) Machine Shop Serv	$ 20,000.00	$ 400.00	$ 8,000.00
5) Professional Serv	$ 20,000.00	$ 400.00	$ 8,000.00
6) Rewinding Motor & Gen.	$ 20,000.00	$ 400.00	$ 8,000.00
7) Tire Repair	$ 11,000.00	$ 220.00	$ 4,400.00
TOTAL AMT:	$ 89,000.00	$ 1,780.00	$ 35,600.00

TOTAL AMT FOR 10% PLUS 2% IN A 20 YRS SPAN	**$ 5,327,230.00**
TOTAL AMT FOR 12% PLUS 2% IN A 20 YRS SPAN	**$ 6,385,556.00**

It should be noted that the above savings apply only to the Port's cargo handling equipment inventory, and are conservative estimates in that it does not account for potential cost savings for equipment owned and operated by commercial users of the facility, to include shippers and trucking companies. Cargo related equipment inventories for these other users, which also operate within the proposed project area, include 90 tractors, 162 TEU chassis, and 83 FEU chassis. It is anticipated that cost savings benefits will extend to these activities as well.

Job Creation and Economic Stimulus

With the construction and renovation work to be done, a total of 383 (FTEs, New, and Casual) Port employees will be retained providing for long-term jobs. The short-term jobs are primarily

related to the construction of the project while the long-term jobs are related to the operation and maintenance of the facility:

vii. Short Term Jobs (project construction)

- 25 full-time multi-disciplined workers to complete the Projects in a period of ten (10) to twelve (12) months

viii. Long Term Jobs (PAG)

- Over 31 FTE Port employees (New and Vacant)

PAG will work with the Guam Contractors Board and its resources to ensure that all local construction and support businesses will have the opportunity to bid on the project. Due to a limited amount of supplies produced on Guam, a significant portion of the construction supplies are expected to come from the Continental United States, sharing a significant portion of the positive effects with the mainland. In particular, much of the materials will be manufactured in the U.S. mainland as well as some of the equipment used to undertake the construction. These supplies will also be carried by Jones Act ships constructed in the U.S. and sailed with U.S. flags and U.S. crews.

Job Creation in an Economically Distressed Area

The Project will generate jobs and economic stimulus in a severely distressed area. As shown in following table, Guam's per capita income was a mere $12,864 in 2010, approximately 37% of the U.S. average. The most recent unemployment rate available for Guam is for December 2012, when Guam experienced a 10.7% unemployment rate. At the time, Guam's unemployment rate was 2.9 percentage points higher than the U.S. average (at 7.8%). In general, unemployment has a history of being higher in Guam than in the mainland United States. Guam meets the criteria for determination as an Economically Distressed Area as defined by Section 301 of the Public Works and Economic Development Act of 1965.

The jobs created during construction will be high-quality jobs, as the average wage paid will be significantly higher than the average wage in the private sector:

- According to the Government of Guam Department of Labor, the average annual wage in Guam is currently $21,970 across all private sector jobs.
- Construction jobs in Guam (general contracting) average $27,900 per year, which is 26.8% higher than the average private sector wage in Guam.

Comparison of Guam and U.S. per Capita Income and Unemployment Rate

	Per Capita Income			Unemployment Rate		
Year	**U.S.**	**Guam**	**Difference**	**U.S.**	**Guam**	**Difference**
2010	$39,945.00	$12,864.00	$27,081.00	7.8%	10.7% (Dec. 2012)	+2.9%
2008	$39,751.00	$13,200.00	$26,551.00	7.1%	9.3% (Sept. 2009)	+2.2%
2007	$38,615.00	N/A	N/A	6.2%	8.3%	+2.1%
2005	$34,690.00	$12,768.00	$21,922.00	4.8%	7.0%	+2.2%

Note: Totals may not add due to rounding

Proposed Project Schedule

If funded by this grant, the PAG will work expeditiously to ensure that construction activities commence immediately upon receipt of the grant award. Federal procurement procedures and local Department of Public Works requirements will be strictly followed. Because it is critically important that the PAG address its operational challenges immediately, the following aggressive construction schedule has been developed to ensure that the project's full implementation is achieved within the twelve (12) month construction period.

Milestones	Start Date	Completion Date
1. Anticipated DOT Notification of Grant Award	September 1, 2013	October 31, 2013
2. USDOT/PAG coordination to address any project issues if necessary	November 1, 2013	November 30, 2013
3. Coordination between PAG Engineering and Procurement to develop Project Action Plan	December 1, 2013	January 31, 2014
4. Coordination with PAG Procurement Division to develop the Request For Proposal package	February 1, 2014	April 30, 2014
5. Completion of RFP documents to include but not limited to: Solicitation Announcement, Evaluation of SOW, Selection of Contractors and Issuance of Contract)	May 1, 2014	June 30, 2014
6. Groundbreaking & requirement for Contractor to perform site assessment to be completed within 60 days	July 1, 2014	August 31, 2014
7. Start of construction (12 months)	September 1, 2014	September 30, 2015
8. Contractor facility turnover to PAG	October 1, 2015	October 30, 2015

V. Planning Approvals

Environmental Approvals

The Port Authority of Guam Port Modernization Program Final Environmental Assessment, October 3, 2012, has been prepared. MARAD, the lead federal agency, has issued a Finding of No Significant Impact, based on inter-governmental regulatory review/consultations, and public input solicitation. This project will be ready for final local permitting and execution within the timeframes required and specified.

Legislative Approvals

The PMP includes funded and unfunded program elements and is consistent with the Port produced Master Plan Update that was publicly vetted and approved by the Guam Legislature in 2008. Follow-on legislation created an authorized debt-ceiling allowing the Port to borrow up to $ 54.5 M in support of the organic growth driven portions of the PMP. To the extent that cargo flow and revenues support borrowing, the Port will pursue funding for elements of the PMP.

Federal support for this PMP was also included in the DOD Appropriation Act of 2009. This was later supported by a transfer of DOD Funding to the Port Improvement Enterprise Fund in 2010.

Public Law 30-52, signed on July 14, 2009, included the Port as a public utility under the regulatory oversight supervision of the Public Utilities Commission (PUC) previously created by Public Law 17-74. The legislation provided the Port with a method for timely review of proposed rate changes and appropriate oversight of such rate changes by an independent regulatory authority. The law provided that any existing rates and other items and charges of the Port would remain in effect unless or until modified by law. The PUC is authorized to establish interim rates and charges as may be necessary to cover the operation and maintenance of Port facilities and equipment.

In general, rate and tariff adjustments are designed to allow the Port to undertake sustainable operations and services. This means creating the revenue needed to address the cost of daily operations and any capital program debt service (principal and interest on loan repayments, amortization of depreciable assets, and expected return on investment).

State and Local Planning

PMP requirements have been progressively defined through a series of development planning, financial analyses, operations planning, site assessment, stakeholder outreach, legislature coordination, and preliminary engineering and design activities. This progression represents a mix of requirements definition, stakeholder alignment, and legislative compliance requirements that have served to inform the Implementation Plan development effort.

Technical Feasibility

The components have been determined to be technically feasible. The development of the Project Schedule, the Specifications/Scope of Work and Budget Cost Estimates validates that this is a technically feasible project that will have both immediate short and lasting long-term benefits.

Financial Feasibility

There have been recent delays to the military buildup schedule (and cargo flow) as DOD prepares a Master Plan that is responsive to both its troop relocation plans and the pressures to reduce overall military spending plans at the national level.

Assuming the military re-set adjusts but does not do away with the program, this presents an opportunity for the Port to get out in front of the buildup by making cargo handling capacity improvements and thereby removing the potential bottleneck before cargo flow climbs to projected levels. However, this is somewhat of a catch 22 situation given that cargo flow is needed to support Port borrowing.

To resolve this challenge, early program funding needs will have to be met by federal grants and increased tariffs on existing or slightly increased cargo volumes. Following that, increased Port borrowing will follow the natural increase of cargo and resulting revenues and be applied to remaining unfunded mandates in order of priority.

Project Readiness and NEPA

The Final Environmental Assessment was submitted to MARAD for review and the agency subsequently issued a NEPA Determination of Finding of No significant Impact (FONSI). This notice was published in the Federal Register on November 8, 2012.

VI. Federal Wage Rate Certification

The Port Authority of Guam has signed a certification that it will comply with Subchapter IV of Chapter 31 of Title 40 of the United States Code.

Environmentally Related Federal, State, and Local Actions

The Port will ensure that all other Federal and local government environmental requirements will be satisfied through the permits and approvals process.

Supporting Documentation

The following documents can be found on the Port Authority of Guam's TIGER website, http://www.portguam.com/tiger-cy-drainage-and-pavement-repair

- PAG Master Plan Update 2007 Report, April 2008, Performed by PB International, Inc.
- PAG-MARAD MOU, Adopted 12/08/2008
- Jose D. Leon Guerrero Commercial Port of Guam Master Plan Update 2007 Report to the Legislature Pursuant to 5GCA Chapter 9 §9301
- Agreement between the Government of Japan and the Government of the United States of America Concerning the Implementation of the Relocation of the III Marine

Expeditionary Force Personnel and their Dependents from Okinawa, Japan to Guam signed February 17, 2009

- 2011 Port Authority of Guam Updated Financial Feasibility Report
- Financial Statements and Other Financial Information, Port Authority of Guam, Years ended September 30, 2012 and 2011 with Report of Independent Auditors
- FOIA Annual Report, FY2012
- FY2013 Year to Date Staffing Pattern Report – March 31, 2013
- BLS Bureau of Labor Statistics Department of Labor Government of Guam, Per Capita Income and Unemployment Rate
- Federal Wage Rate Requirement Letter signed by the General Manager of the PAG, May, 2013
- Port Authority of Guam Modernization Program, Final Environmental Assessment, October 3, 2012
- 77 FR 67057 Notice of Availability of a Finding of No Significant Impact for the Port Modernization Program
- Equipment Status Report 2013
- Letter of Support