

# ***FINAL REPORT***

## ***Comprehensive Tariff Study PAG-10-005***

***Prepared for:***

***Port Authority of Guam***



***NOVEMBER 24, 2010***

***Prepared by:***



***The Cornell Group, Inc., USA***

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November 24, 2010

Jose B. Guevara, CGFM  
Financial Affairs Controller  
Port Authority of Guam  
1026 Cabras Highway  
Piti, Guam 96925

Subject: **FINAL REPORT - TARIFF STUDY – PAG 10-005**

Dear Mr. Guevara;

We are pleased to submit the Final Report and Tariff. With the submission of this document, we have completed Task V, Report Recommendations.

Please advise the schedule for the PUC final presentation so we can plan our time accordingly.

Sincerely,

Robert W. Goethe  
Director  
THE CORNELL GROUP, INC.

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## I. Executive Summary

The Cornell Group, Inc. (Cornell) has been retained by the Port Authority of Guam (PAG) to perform a comprehensive review and revision of the existing terminal tariff. The proposed tariff must be capable of generating sufficient revenue to cover operating costs of the Port Authority, and service the loans required for a proposed capital expansion of the port. The primary objective is to develop an economically sustainable tariff that is equitable and reasonable for the port as well as its users, consistent with the quality and level of service provided by the port. As importantly, this report will provide the basis and justification for PAG's application to the Guam Public Utilities Commission (PUC) for a change in tariffs. In addition the proposed tariff and its application under the jurisdiction of PUC, must comply with Federal Maritime Commission (FMC) tariff rules.

This report presents our legal and economic analyses of the current tariff, and proposes a modified tariff that satisfies the above criteria.

### A. Legal Modifications

While there are no legal impediments to applying the PAG tariff, the current PUC rate approval process, unless modified, may delay a rate change or contract that PAG deems necessary for effective operation of the port. The setting of an emergency or non-recurring tariff may be addressed by modifying the tariff to allow PAG to immediately apply an emergency tariff, which the PUC can review and approve, modify or suspend any acts that it finds to be unlawful, at its next scheduled meeting. The more commonly occurring situation in which PAG customer tariff requests are delayed must be addressed through a modification and shortening of the PUC approval process for PAG tariff requests.

### B. Financial Feasibility & Proposed Tariff Increase

The U.S. Navy's Record of Decision (ROD) announced on September 22, 2010 by Department of Defense Joint Guam Program Office (JGPO) confirmed that the construction projects for the military build-up will commence. Based on the import needs of the military buildup, annual cargo growth at PAG over the next 20 years will range between 1.07% to 1.27% for containerized cargo, 2.14% for breakbulk and 3.22% for cement, peaking between 2011 and 2014, as shown below.

**Exhibit E1: PAG Cargo Projections - With Military Buildup**

With Military Buildup	2010	2011	2012	2013	2014	2015	2020	2025	2030	CAGR
CT Chassis (Rev-Unit)	25,961	27,325	31,122	34,203	42,720	44,154	29,554	30,799	32,273	1.07%
CT Ground (Rev-Unit)	41,163	43,325	49,347	54,232	67,736	70,010	46,861	48,835	51,171	1.24%
CT Transshipment	15,249	16,050	18,281	20,090	25,093	25,935	17,360	18,091	18,956	1.27%
Breakbulk (Rev-Ton)	72,794	110,740	126,910	148,960	154,350	123,970	88,690	92,610	97,510	2.14%
Cement (Rev-Ton)	80,000	244,000	367,000	550,000	459,000	139,000	99,000	104,000	109,000	3.22%

Source: PAG and PB data. CAGR\* - Compound Annual Growth Rate

PAG has estimated that a total capital investment of around \$207 million will be required to replace the ageing facilities and develop the port's capacity to handle potential military cargo.

However as of November 2010, PAG has secured only about 50% or \$103.5 million in funds consisting of a \$50 million DOD grant and a commercial loan of \$53.5 million to develop its facilities and acquire equipment to handle this growth in cargo. PAG will need to secure an additional \$10 million of debt to acquire two container cranes by 2012 as required by Substitute Bill No. 333-30 (LS) OF PUBLIC LAW 30-57. PAG's facilities and equipment construction plan in the amount of \$113.5 million is presented below.

**Exhibit E2: Facilities and Equipment Construction Schedule**

Total Facilities & Equipment Constructed	Percent Distribution	Amount \$Million	2011	2012	2013
Facilities Civil	89.2%	\$80.3	\$3.3	\$52.0	\$25.0
Facilities Buildings	10.2%	\$9.4	\$9.4	\$0.0	\$0.0
Facilities Security	0.4%	\$0.3	\$0.3	\$0.0	\$0.0
<b>Total Facilities</b>		<b>\$90.0</b>	<b>\$13.0</b>	<b>\$52.0</b>	<b>\$25.0</b>
Equipment - Top Loaders		\$3.5	\$3.5		
Equipment- TOS Etc.		\$10.0	\$10.0		
Equipment- Cranes		\$10.0		\$10.0	
<b>Total Equipment</b>		<b>\$23.5</b>	<b>\$13.5</b>	<b>\$10.0</b>	<b>\$0.0</b>
<b>Total Construction Cost</b>		<b>\$113.5*</b>	<b>\$26.5</b>	<b>\$62.0</b>	<b>\$25.0</b>

Source: PAG (\$133.5 million = \$63.5 million Debt + \$50 million DOD Grant)\*

PAG will need to generate additional revenues through an increase in tariffs to service its debt of \$63.5 million.

Based on a financial analysis of potential revenues and costs over a 20-year period and the resulting annual cash flow, it is estimated that container and general cargo tariffs at PAG will need to be increased by at least 3.95% in 2011 and each year thereafter to generate the cash required to operate the port effectively, achieve an adequate return on investment, and satisfy the loan covenants of the commercial loan of \$63.5 million. The results of the analyses are presented in the following exhibits and described next.

A public port should expect to achieve a return on its investments of between 10% and 12%. A minimum annual tariff increase of 3.95% commencing in 2011 will provide PAG an acceptable Internal Rate of Return (IRR) of 10.12%, and a positive cash flow, as shown below.

**Exhibit E3: Results of Tariff Rate Sensitivity Analysis with \$63.5 Million Debt**

Tariff	Annual Tariff Increase %	Project IRR %	NPV \$ Million	Remarks
<b>PUC Approved</b>	2.80%	2.34%	(\$15.7)	IRR & NPV NOT Acceptable
<b>PUC Approved</b>	3.40%	6.97%	\$9.1	IRR & NPV NOT Adequate
<b>Minimum Acceptable Tariff</b>	<b>3.95%</b>	<b>10.12%</b>	<b>\$33.3</b>	IRR Acceptable
<b>Maximum New Tariff</b>	4.34%	12.04%	\$51.5	IRR Ideal

Source: Cornell analysis

It is important to note that the proposed tariff increase of 3.95% produces an acceptable IRR and NPV for the current level of investment of \$133.5 million, \$50 million of which a grant and \$63.5 million is a commercial loan. An additional \$100 million of debt for investment in the port to handle the military buildup cargo without an increase in cargo volume and revenue will plunge the port into a negative NPV of over \$90 million and an IRR of -2.6%, if the tariff rate increase remains at 3.95%. If the total debt is increased to \$163.5 million, PAG will require a tariff rate increase of 5.9% to achieve an IRR of 5.5% and an increase of 7.4% to achieve an IRR of 10%.

### C. PAG's Capability to Service its Debt

The cash flow from a 3.95% annual tariff increase will be adequate to service PAG's debt of \$63.5 million, and satisfy the lender's Loan Covenants. For the next five years, PAG will be able to achieve a Debt Service Coverage Ratio (DSCR) in excess of 1.30 and Interest Coverage Ratio (ICR) in excess of 1.50, as shown below.

**Exhibit E5: PAG's Ability to Service Loan of \$63.5 million**

Loan Covenants	Minimum Required by Lender	Port of Guam Projections				
		2011	2012	2013	2014	2015
<b>DSCR</b>	<b>1.30</b>	<b>1.35</b>	<b>1.80</b>	<b>2.61</b>	<b>4.41</b>	<b>4.69</b>
<b>ICR</b>	<b>1.50</b>	<b>1.76</b>	<b>2.51</b>	<b>3.73</b>	<b>6.47</b>	<b>7.06</b>

Source: Cornell analysis based on ANZ Loan Terms

### D. Similar Port Comparison

Finally, a comparison of simulated costs incurred by a specific Matson vessel calling at similarly operated U.S. ports, suggests that conservatively, container rates at Guam may be increased by 15% in 2011 and still remain competitive with U.S. ports. This is shown in the following exhibit.

**Exhibit E4: Guam Tariff Comparison with Similarly Operated Ports**

	Guam	S. Atlantic	Gulf of Mexico	N. Atlantic
Revenue Per Container	\$274.02	\$323.13	\$275.57	\$323.23
More (Less) Than Guam/Container		\$49.12	\$1.56	\$49.21

Source: Cornell analysis from PAG tariffs & U.S. stevedore, applied to a Matson vessel regularly calling Guam

### E. "Just and Reasonable" Tariff Increase

Using the PUC consultant's criteria for determination of a "just" and "reasonable" tariff increase, PAG's request for a 3.95% tariff increase:

- Is in line with economic trends for Guam.
- Covers the cost of operations included in the Port Master Plan.
- Corresponds appropriately to the current market conditions in Guam, and does not materially increase the costs to Guam consumers.

- Is in line with ports with similar operations.

Therefore it is our considered opinion that a 3.95% annual increase in tariffs recommended for PAG is economically and competitively sustainable, as well as “just” and “reasonable”.

## F. The Complete and Modified Tariff

The complete proposed and modified tariff is presented in Appendix A, and includes the following recommendations:

### Equalization of Chassis and Ground Rates:

To encourage greater use of grounded container operations and thus better utilize port storage areas and defer construction of additional container storage and handling facilities, the container handling rates should be equalized to \$127.11 in 2010 and \$132.13 in 2011 for both chassis and grounded containers. This will ensure that PAG is fairly compensated for the services provided to the cargo but with no increase in total handling charges to the port’s customers, while at the same time freeing up space and increasing productivity at the port.

#### Exhibit E6: Proposed Equalization of Container Tariffs

Rate Item	2010 CHASSIS	2010 GROUND	2011 CHASSIS	2011 GROUND
Current Stev. & Hand. Rate	\$191.29	\$263.67	\$198.85	\$274.08
<b>New Equalized Rate</b>	<b>\$235.68</b>	<b>\$235.68</b>	<b>\$245.00</b>	<b>\$245.00</b>
Change US\$ Per Box	\$44.39	(\$27.99)	\$46.14	(\$29.10)
Percent Change	23%	-11%	23%	-11%

Source: Cornell analysis

The impact of this tariff equalization proposal on PAG’s revenue for 2011, if implemented fully, is presented below.

#### Exhibit E7: No Impact on PAG Revenue or PAG Customers as a Result of Tariff Equalization

Container	PAG 2011 Revenue \$ Million			Percent Change
	Revenue At Current Tariff Structure (Stev.+Hand.)	Revenue At Equalized Rate (\$245/Box)	Change \$	
<b>Chassis</b>	\$5.4	\$6.7	\$1.3	23%
<b>Ground</b>	\$11.9	\$10.6	(\$1.3)	-11%
<b>Total Revenue</b>	<b>\$17.3</b>	<b>\$17.3</b>	<b>\$0.0</b>	<b>0%</b>

Source: Cornell analysis

As shown above, an equalization of rates results in no changes in PAG’s annual revenue and therefore causes no change in the combined costs to the port’s customers and users. It is expected that since there will be no change in the overall cost to the port users, Guam consumers will similarly see no change in their transportation costs as a result of the equalization of container rates proposed here. The expected impact of this rate equalization is as follows:

- As PAG does not gain or lose any revenue as a result of the proposed rate equalization and Guam consumers should see no increase in their port-related costs, challenges to this rate proposal are not likely be supported by Guam consumers.
- The equalization to a single rate will encourage chassis operators to convert to grounded operations, thus allowing the port to improve space utilization, increase productivity, and at a minimum delay the need for investment in developing additional storage space.

**Unanticipated Tariff Changes:**

Amendments to deal in a timely manner with unanticipated and emergency tariff adjustments have been added to the tariff.

**Rationalization and Simplification of Tariff:**

As a result of numerous “Board Memoranda” issued after 2002, the current tariff has become unwieldy and complex for port users. To make it more user-friendly and easier to apply, the new tariff has been rationalized and simplified by incorporating the Board Memoranda in the main body of the tariff. The language has been modified to link each tariff item clearly and unambiguously to the service provided by the port. Certain rate structures have been altered to address current operating and financial issues.

A schedule for implementing the tariff modifications is proposed.

The detailed analysis and recommendations are presented next.

## II. The Current Situation

The Port Authority of Guam (PAG) intends to implement a Port Modernization Master Plan, including an estimated \$200 million in capital improvement projects, and will need to fund the improvements through a combination of internally generated operating income, commercial loans and government grants. Part of this capital improvement program is in preparation for a proposed relocation of Okinawa-based Military personnel to Guam, which is expected to generate significant economic benefits for Guam. Regardless of the nature and source of funding for these projects, sound fiscal policy suggests that the cash flow generated from the projects should adequately cover the cost of capital, and earn an adequate return on investment. The port needs to determine the level and nature of adjustments in port tariffs required to generate the cash flow to support its planned capital improvement projects.

Prior to the enactment of Law 30-52, the Port's terminal tariff had not been adjusted since 1993. This had created a situation whereby the port was required to depend on cost control and government subsidy to maintain and upgrade the port's facilities and equipment. Since the passage of this law, the Public Utilities Commission (PUC) has approved the port's application for "interim" tariff rates, which have been implemented as of October, 2009 & February 2010. These new tariffs and any additional tariff adjustments need to be economically and financially justified.

The Government and the port have identified major additions and upgrades to the port to sustain its position as the Hub port for the Micronesia Region. It has become evident to port and government officials that changes to the tariff and other charges are necessary to put a Master Plan into action.

The port needs to identify the level and type of rates and charges that may be adjusted without altering the competitive position of the port or adversely affecting the port's users and the economy of Guam. To accomplish this, the port needs to identify methods for periodic tariff increases that are consistent with U.S. port industry practices, and compliant with tariff filing regulations of the U.S. Federal Maritime Commission (FMC).

The Port of Guam engaged The Cornell Group, Inc. (TCG) to provide professional assistance in performing a comprehensive review and revision of the existing terminal tariff, and developing the evidence to present its case to the Public Utilities Commission.

The Cornell Team visited and inspected of the Guam Port, and met with the Chairman and Board of Port Authority of Guam, Management and staff of PAG, the Legal Counsel of the Public Utilities Commission (PUC), and the Ports Users Group (PUG). In particular, TCG met with and discussed relevant tariff, operations, financial and legal issues with the following individuals and entities:

### ***Port Authority of Guam***

Monte Mesa, Chairman of the Board  
Enrique Agustin, General Manager  
Jovyna Lujan, Vice Chair  
Mr. Joseph Camacho, Board Member  
William Beery, Board Member  
Vivian Leon, Deputy GM

Jose Guevara, Financial Controller  
John Santos, Operations  
Herman Paulino, Planning  
Joann Conway, Tariff Administration  
Glenn Nelson, Tariff Committee  
Jeni Guerrero, Billing & Tariff Committee  
Simon Pinuala, Tariff Committee  
Ray Rantos, Tariff Committee  
Joe Ulloa, Tariff Committee

***Public Utilities Commission***

Fred Horecky, PUC Legal Counsel

***Port Users Group:***

Ambyth Shipping  
Horizon Lines  
Inchcape Shipping  
Marianas Express Line  
Marianas Steamship  
Matson Navigation  
Seabridge Inc.

Some of the issues that surfaced as a result of our initial investigations included the following:

- Funding for the capital expansion has not been confirmed, and the source of financing the second tranche of \$100 million is uncertain.
- The planned military build-up may be delayed by two or more years, and may affect the funding, revision of tariffs and the expansion of the port.
- The current chassis operation is resulting in a space constraint and lower productivity at the port terminals, but conversion to a grounded operation may presently be opposed by the major carriers serving the port. Already, the increase in military build-up cargo (pre-fabricated housing units) handled at the port is resulting in shortage of space.
- The cost of operation at the port is high compared to the revenue generated by the port, and this may be a result of lower productivity due to the mix of grounded and chassis operations.
- The text and the unit rates in the tariff document do not correctly reflect the cost of current operations and services provided by the port to port users.
- The port needs to establish a system and standardized analyses, reports and procedures for communicating with and applying to the PUC for tariff changes, consistent with PUC guidelines.

These and other issues are considered for subsequent financial and tariff analysis.

The legal analysis is presented next.

### III. The Legal Situation and the FMC

This section presents our analysis of the legal and other documents relevant to the Tariff Study for the Port Authority of Guam. In preparing this report, we have reviewed the following documents:

Document	Dated
PL 13-87 PAG Enabling Act for Autonomous Agency	1987
PAG Terminal Tariff 1993 - Current	1993
CHAPTER 12, Article 1 - PUBLIC UTILITIES COMMISSION AND THE GUAM TELECOM ACT OF 2004	2004
Public Law 30- 19 Lease Rates- AMENDED LEASE RATES FOR OFFICE, WAREHOUSE Etc.	3-Apr-09
Public Law 30-52 PUC- Bill No: 121 (LS)- Placing PAG under PUC	14-Jul-09
PB Report to Legislature – Master Plan Update 2007	3-Aug-09
PL30-57 Approval of Phase I Master Plan 091109	11-Sep-09
PAG requests PUC for Interim Rate Increase	27-Oct-09
Notice to PAG Customers 122109	21-Dec-09
SN Guam PUC Interim Tariff Review_final_011710	21-Jan-10
IMPLEMENTATION POLICY FOR FACILITY MAINTENANCE FEE	25-Jan-10
Letter to PUC List of PAG Customers	26-Jan-10
Revised Maintenance Fee Policy	27-Jan-10
SN Amendment 1- Report of Interim Tariff Investigation PAG Complete 012710	27-Jan-10
29 10 PAG Docket 09-02 - PUC order Approving Interim Tariffs for PAG	29-Jan-10
PUC Order approving Implementation Policy for Facility Maintenance Fee	25-Feb-10
Board Memo- PAG Facility Maintenance Fee Policy & Guidelines Implemented	1-Mar-10
P L 30-100 – S Bill No 333-30 (LS) PAG to Immediately seek \$50m Federal funding	11-Mar-10
Petition to Amend Facility Maintenance Policy	20-Apr-10
SN Opinion on Facility Maintenance Fee increase	27-Apr-10
PUC Order approving Revised Maintenance Fee Policy	27-May-10

In addition we have discussed with the U.S. Federal Maritime Commission’s (FMC) staff its statutes and rules pertaining to tariffs and ports, and the extent of FMC’s jurisdiction over rate setting procedures and policies at U.S. ports, including Guam.

#### A. LEGAL ANALYSIS

The Port Authority of Guam (“PAG”) was placed under regulatory oversight supervision of the Public Utilities Commission (“PUC”) by PL 30-52 dated July 14<sup>th</sup> 2009. This law was passed to “provide the port with a timely review of proposed rate changes and appropriate oversight of such rate changes by an independent regulatory authority”. By this law the PUC may approve interim rates through December 2010, during which period a study must be conducted to determine a more permanent rate structure for the port. The PUC approved interim rates for the PAG effective October 2009.

The potential implications for the Port Authority of Guam operations and tariff collections, in view of the economic regulatory role of the Public Utilities Commission, is discussed next.

## **1. FMC Jurisdiction over PAG Tariffs:**

The PAG is an entity of the Government of Guam and, with the exception of establishment of rates for services, contracts and leases, it is subject to any law that is applicable to any other government agency. Additionally, the PAG, while it does not file its tariff with the FMC, remains subject to that agency's jurisdiction, as is noted in the tariff. Because PAG is also regulated by the FMC, the legal doctrine of “preemption” comes into play. This suggests that PAG acts/tariff items acceptable to FMC are unassailable under Guam law.

In some instances, a conflict may arise when PAG determines that it wants to enter into a payment contract with a user that is behind in its payments, but this contract is not approved by PUC.

The tariff includes two provisions that assist in improving collections and have been approved by the FMC. One other provision is also helpful with collections, but so far as we are aware, has never been tested in litigation.

The PAG tariff includes what are commonly known as “vicarious liability” provisions (Item 1 for example), whereby a disclosed vessel agent is held responsible to PAG for charges incurred by the vessel. Such provisions are common in U.S. port tariffs, and have been approved by FMC in several cases beginning in the 1970s. The rationale is that once a vessel sails it is difficult, and sometimes impossible for the port to collect its charges, whereas the agent has an ongoing relationship with his principal and thus is in a good position to collect the money.

There are circumstances where a vessel fails to pay the agent and the amount is large enough that the agent is incapable of paying. In this circumstance the only recourse is for the agent and the PAG together to seek assistance under international law to arrest the vessel in another port. There are circumstances where this has been successful provided the owner of the vessel has not taken the vessel out of service, sold the vessel or declared bankruptcy.

Another collection item that has withstood legal challenge before the FMC is the provision that allows PAG to deny the use of its facilities to an entity that has not paid its bills (Memorandum 2002-10). This was approved by the FMC in the 1980's. In the same 1980's case the FMC ruled that it was improper for a port to impose criminal sanctions for violation of the tariff. We recommend PAG to drop the criminal sanctions rule in its tariff.

Item 15 of the current tariff holds the vessel/agent responsible for collecting from cargo interests those charges assessed against cargo. Such a provision seems reasonable, as the vessel is in privity of contract with the cargo interests. Since the port pays the agent a fee for such collection it gives strength to the responsibility clause.

The agents in Guam may in the future challenge the “vicarious liability” clause when PAG attempts to assert its rights under such a clause. Since the vicarious liability and denial of service provisions have been upheld by the FMC, this means that PUC may not lawfully disapprove them.

## **2. Timeliness of Rate Implementation and Potential Loss of Revenue:**

The time required from the first application for a rate change request by the PAG to the final approval by PUC and implementation of the rates by PAG may adversely affect the revenue of the port. The PAG must inform the public about rate change requests by the port, and then the

PUC approve or disapprove those rates at a PUC hearing, at which time public or port customer objections may be set forth. Changes to Port Tariffs should be made effective at the beginning of the port's fiscal year (October 1<sup>st</sup>), which is the same time that wage increases are considered and implemented. This means that the port will have to decide on increased rate requirements in the spring of each year, prepare justification for those changes, submit them to the PUC in May, publish them for public review in July and have them approved by August 1<sup>st</sup> so as to give their customers 60 days' notice of change. The 60-day time frame is needed by the customers to change their prices to their customers. If any of the time frames are delayed, the port is unable to implement and collect the new and increased rates, and this may result in lost revenue. Any port tenant wanting to forestall a proposed rate increase can misuse this process to simply delay the rate increase indefinitely.

### **3. Reduced Responsiveness to Customers:**

The time required for the tariff approval process may also affect PAG's responsiveness to its customers' needs. The PUC regulatory process requires PAG to obtain PUC approval of any rate adjustment no matter how small, whether a rate increase or a decrease. PUC must hold at least three public hearings before rendering its decision. This process has the potential to be time consuming, leaving PAG unable to operate the port in the ordinary course of business. For example, a valued carrier may request a temporary rate decrease for valid reason, and PAG might agree to give the decrease, but be unable to do so until PUC acts.

Moreover, PAG must seek PUC approval of any lease or contract that it wishes to enter into. The ocean carriers that PAG must serve may not be willing to wait several months for PUC approval of a simple land lease agreement. Also, if that carrier wishes to enter into a contract which, for their competitive purposes should not be made public, the PAG would still have to hold public hearings and make the contract public.

### **4. Ability to Implement Tariffs for Uncommon and Non-Recurring Situations:**

The port is sometimes faced with new, uncommon or one-time tariff situations, which may require an immediate determination and application of a new tariff. These may be in the form of an unidentified need for a new regulation, the clarification of a regulation or the establishment of a rate for which no rate has been established in the tariff. One recent example is that of a PAG customer that wanted to sink and store large concrete construction pods underwater in an unused area of the port for use at a later date. In such cases, the regular PUC tariff approval process is deficient and unable to address the needs of the port's customers in a timely manner. To rectify this deficiency, we recommend adding the following paragraph to the PAG tariffs under "Amendment of Tariff" to read as follows:

*"Emergency measures for such amendments may be set forth by the Port Authority Board of Directors to establish measures for which there has not been established precedence. Such changes to the tariff will be submitted at the next regular meeting of the Public Utilities Commission for approval."*

## **B. FEDERAL MARITIME COMMISSION (FMC) STATUTES APPLICABLE TO PAG**

As there has been some debate about the extent of FMC's jurisdiction over PAG's rates and tariffs, it is appropriate here to define the role of FMC.

The FMC is the agency that regulates, ports, terminals and steamship lines, however, within the past 15 or more years it has gradually lessened its oversight as it determined that the market place was sufficient to control rate structures and operating rules. As certain clauses and rate structures have been challenged legally, the Administrative Law judges have issued rulings such as the vicarious liability clause mentioned above. When this is done the ruling overrides any other entity's opinion or tariff item. The statutes and rules of the FMC relevant to PAG tariffs is the Shipping Act of 1984.

The FMC has jurisdiction over rates and tariffs for all Marine Terminal Operators (MTO), and PAG is defined as an MTO as per FMC's statutes and rules, quoted here as follows:

"Under the Shipping Act of 1984, the FMC regulates certain activities of Marine Terminal Operators (MTOs). In order, to understand who qualifies as a marine terminal operator subject to that regulation, it is helpful first to clarify three related entities: (1) Ports, (2) Public Port Authorities, and (3) Marine Terminals.

- Port: "Port" is a geographic term referring to a harbor with piers or docks where ships can load and unload cargo.
- Public Port Authority: Most major port facilities that are publicly owned and maintained by multi-state, state, county, district or other public or quasi-public organizations that are commonly referred to as "public port authorities. These are the agencies responsible for the overall administration of the property, terminals and other facilities at a public port.
- Marine Terminal: A terminal is an assigned area with facilities for loading and unloading the cargo or passengers (for cruise lines) of various types of vessels. Typically a marine terminal will also be where cargo is received, stored, and later distributed to sites outside the port. Different kinds of cargo are handled at different kinds of terminals. For example, bulk cargoes such as coal, grain, and petroleum require highly specialized facilities for their handling, while general cargo (including containerized cargo) requires adequate crane service and appropriate storage areas.

Under the Shipping Act of 1984, the FMC regulates certain practices of the entities that operate marine terminals. These entities, designated "marine terminal operators," are defined as parties in the that offer *terminal services* - that is, parties engaged in "the business of furnishing wharfage, dock, warehouse or other terminal facilities," to ocean common carriers in foreign commerce. In practice, that definition covers three sorts of MTOs:

- **Public port authorities** – These qualify as MTOs because they own and maintain the docks and other facilities that ocean common carriers use, and because they sometimes directly operate the terminals as well.
- **Private terminal operators** – These are companies that, typically, lease terminals from a public port authority (which acts as landlord) and operate those terminals as a private business that serves ocean common carriers calling at the port.
- **MTO Conferences** -- These are regulated organizations, called MTO "agreements," of multiple MTOs (port authorities, private MTOs, or both), usually composed of MTOs operating in a single port, or of MTOs from several ports within a single state (such as California) or across a multi-state U.S. coastal range (such as the U.S. Gulf coast).

The FMC's regulations apply to two particular MTO activities:

- The publication of MTO rates, regulations, and other practices in MTO Schedules,(formerly called ""MTO tariffs""); and
- Agreements among MTOs, or between MTOs and ocean carriers, to discuss, fix, or regulate rates or other conditions of service in foreign commerce.”

Additional details on MTOs, MTO Regulations, and MTO Agreements can be found through the FMC's Bureau of Trade Analysis.

### **C. CONCLUSION**

In conclusion and for the reasons discussed above, it may be argued that while PAG has the legislative responsibility to operate the port, there is always the likelihood that the current PUC rate approval process for PAG will at a minimum delay a rate change or contract that PAG deems necessary for effective operation of the port. Some of the issues including the setting of an emergency or non-recurring tariff may be addressed by modifying the tariff to allow PAG to immediately apply an emergency tariff, which the PUC can review and approve, modify or suspend any acts that it finds to be unlawful, at its next scheduled meeting. The more commonly occurring situation in which PAG customer tariff requests are delayed must be addressed through a modification of and shortening of the PUC approval process for PAG tariff requests.

These changes should be considered if PAG is to operate the port successfully in a commercial and competitive port environment with economic regulatory oversight by PUC.

The financial analysis is presented next.

## IV. Financial Analysis

This section of the report reviews the financial condition of the Port, considers the magnitude and timing of the investments proposed by PAG, and tests the level of tariffs required to support the port's operating and capital costs over the next 20 years and generate an adequate return on investment.

### 1. Port Authority of Guam Financial Condition and Rate Request

On October 1, 2009, PAG requested, and after due diligence Guam Public Utilities Commission (PUC) granted an interim tariff increase of 3.4% for specific tariff items, as shown below.

#### Exhibit 1: Tariff Increase Granted by PUC for FY 2010

<b>OPERATING REVENUES</b>	<b>% Increase Requested</b>
CT-CHASSIS	3.4%
CT-GROUND	3.4%
CT-BREAKBULK	3.4%
CT-UNITIZED	3.4%
CT-TUNA	3.4%
CT-RO/RO	3.4%
CT-STUFFING/DEVAN	3.4%
CT-HEAVYLIFT	3.4%
CT-LONGLENGTH	3.4%
<b>OTHER CARGO RELATED REVENUES</b>	
LIFT ON/LIFT OFF	3.4%
PRESLUNG	3.4%
TRANSSHIPMENT CONTAINERS	3.4%
OVERSTOWED CONTAINERS	3.4%
SHIFTED CONTAINERS	3.4%
RIGGED CONTAINERS	3.4%
DIRECT LABOR BILLED	3.4%
EQUIPMENT RENTAL	3.4%
PORT FEES & DOCKAGE	3.4%
WHARFAGE	3.4%
MARITIME SECURITY FEE	3.4%
<b>NON CARGO REVENUES</b>	
MATERIAL USED	3.4%
PASSENGER SERVICE	3.4%
SPECIAL SERVICES	3.4%

Source: PAG

In February 2010, PUC also granted a Facility Maintenance Fee of \$839,000 for FY 2010. In support of its application for higher tariff rates, PAG presented to PUC the potential financial impact of these new tariffs on PAG when applied in FY 2010, as shown in the following table.

**Exhibit 2: PAG Pro Forma Financial Results with Proposed Tariff Increase in 2010**

REVENUE (US\$)	FY 2009 ACTUAL	FY 2010 REQUESTED
CT-CHASSIS	4,777,255	5,081,524
CT-GROUND	9,996,255	10,632,928
TRANSSHIPMENT CONTAINERS	2,404,395	2,459,167
CT-BREAKBULK	722,187	1,327,578
OTHER CARGO RELATED REVENUES	2,272,206	2,383,368
WHARFAGE	3,722,942	3,998,139
FUEL SURCHARGE	764,715	802,951
<b>TOTAL CARGO REVENUES</b>	<b>24,659,956</b>	<b>26,685,655</b>
CEMENT THRUPUT	0	130,000
NON CARGO REVENUES	3,941,031	5,962,526
DEMURRAGE FEES	832,213	853,434
FACILITY MAINTENANCE FEES (NEW)	0	839,140
OTHER FEES & SERVICES	471,304	474,364
<b>NON OPERATING REVENUES</b>	<b>5,244,548</b>	<b>8,259,464</b>
<b>TOTAL REVENUES</b>	<b>29,904,503</b>	<b>34,945,118</b>
OPERATING EXPENSE (US\$)	FY 2009 ACTUAL	FY 2010 REQUESTED
Salaries Including O/T	12,152,943	14,279,201
Benefits	3,713,804	4,697,810
Operational Supplies Etc.	1,767,468	1,693,918
Contractual	4,812,352	4,678,884
Office Supplies & Expenses	1,366,659	1,586,996
Utilities	2,200,901	1,900,000
TOTAL O&M EXPENSES	26,014,127	28,836,809
DEPRECIATION	2,742,614	2,738,242
<b>TOTAL OPERATING EXPENSES</b>	<b>28,756,741</b>	<b>31,575,051</b>
<b>(Loss) Earning from Operations</b>	<b>1,147,762</b>	<b>3,370,067</b>
OTHER INCOME/EXPENSE		
Retiree Supplemental /COLA /Medical, Denta	(1,639,027)	(2,004,904)
Federal Expense	(6,150)	0
Federal Reimbursements	426,573	
Insurance Reimbursements	2,178,886	
Miscellaneous Income	410,754	461,228
<b>TOTAL OTHER INCOME/EXPENSE</b>	<b>1,371,036</b>	<b>(1,543,676)</b>
<b>NET INCOME/LOSS</b>	<b>2,518,798</b>	<b>1,826,391</b>

Source: PAG Schedule submitted to PUC

The table shows that the requested tariff increase of 3.4%, when compared to an expected increase in operating expenses of 9.8%, from \$28.8 million in 2009 to \$31.6 million in 2010, would result in a 27.5% decline in port profits from \$2.5 million in 2009 to \$1.8 million in 2010, a decline of \$692,000.

## 2. Cargo Projections

Parsons Brinckerhoff (PB) developed a cargo forecast for PAG to the year 2040 in its Master Plan, and refined this in its Financial Feasibility Report of August 2008, quote: *“At a macro level, the forecast volumes to 2040 are based on existing cargo volume trends and distributions; population and economic trends in Guam, CNMI and FSM/MI; and DOD forecasts of projected construction cargo, military population and on-going base cargo requirements”* unquote. Two forecast scenarios were provided, one without any military buildup, and the second with full military build-up. However in discussions with its customers, PAG has determined that the growth of cargo is likely to be more conservative than estimated by PB in either scenario.

The U.S. Navy’s Record of Decision (ROD) was announced on September 22, 2010 by Department of Defense Joint Guam Program Office (JGPO) indicating that the construction projects for the military build-up will commence. While the start of construction will depend on funding, upcoming decisions from a new military-civilian panel, and further reviews of ancestral land and harbor dredging proposals, this confirms that PAG must commence development of the port to handle the surge of cargo resulting from the military buildup without delay.

Based on PAG’s knowledge of its customers’ needs and the current economic and business environment worldwide, as well as PB’s cargo volume projections in its *“Cargo Forecast with Military Program Impacts”* report of October 2010, PAG has developed a more conservative (compared to PB) cargo projection that includes the military buildup.

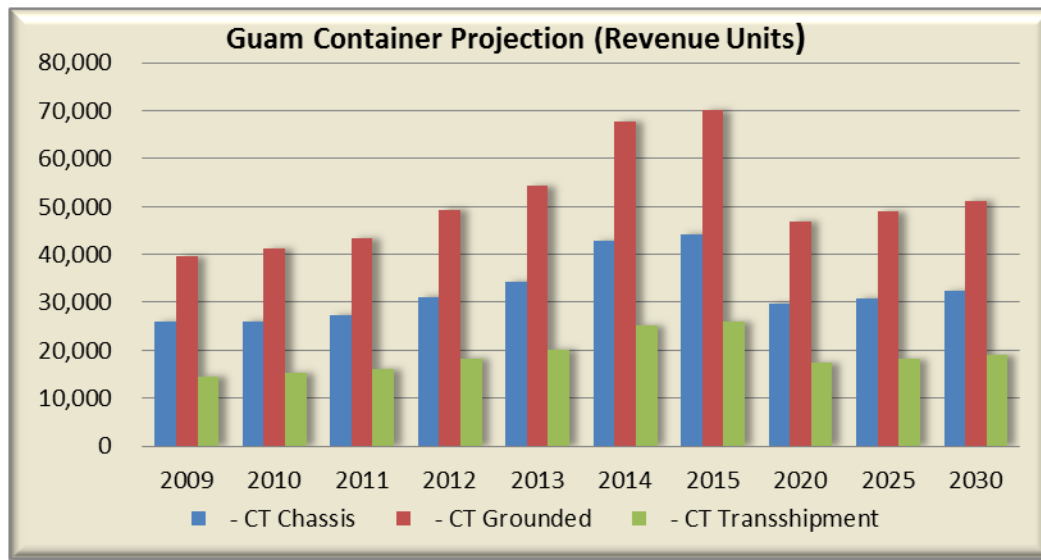
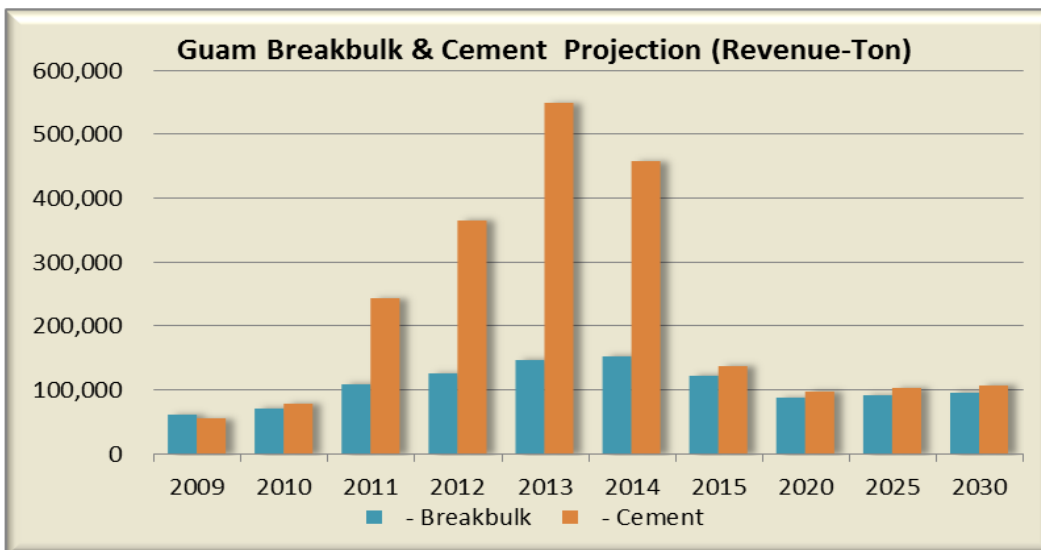
PAG’s cargo projections with military buildup are presented in the following exhibit, and show that over a 20-year period container cargo is expected to grow annually at a conservative rate of between 1.07% to 1.27%, while breakbulk and cement cargo will grow at 2.14% and 3.22% respectively.

**Exhibit 3: PAG Cargo Projections - With Military Buildup**

With Military Buildup	2010	2011	2012	2013	2014	2015	2020	2025	2030	CAGR
<b>CT Chassis (Rev-Unit)</b>	25,961	27,325	31,122	34,203	42,720	44,154	29,554	30,799	32,273	<b>1.07%</b>
<b>CT Ground (Rev-Unit)</b>	41,163	43,325	49,347	54,232	67,736	70,010	46,861	48,835	51,171	<b>1.24%</b>
<b>CT Transshipment</b>	15,249	16,050	18,281	20,090	25,093	25,935	17,360	18,091	18,956	<b>1.27%</b>
<b>Breakbulk (Rev-Ton)</b>	72,794	110,740	126,910	148,960	154,350	123,970	88,690	92,610	97,510	<b>2.14%</b>
<b>Cement (Rev-Ton)</b>	80,000	244,000	367,000	550,000	459,000	139,000	99,000	104,000	109,000	<b>3.22%</b>

Source: PAG and PB data. CAGR\* - Compound Annual Growth Rate

However, the anticipated military buildup will cause a steep increase in primarily construction-related import cargo volumes between 2011 and 2014 peaking in 2013, and this is illustrated in the following charts.

**Exhibit 4:****Exhibit 5:**

Source: PAG and PB data.

### 3. PAG Capital Investment Requirements

The PB Master Plan has emphasized that even without any military buildup, PAG needs to invest in new facilities and equipment, quote: “

- *The Commercial Cargo facilities are aging and in need of substantial renovation and modernization.*
- *As long as the tenant (GEDCA lease with CASAMAR, assigned to PAG for facilities at berth F-2) continues to meet its obligations, there is little redevelopment that can be done in this area.*

...and significant investments will be required with military buildup:

- *The composite picture presented (at PAG) by current below-industry production rates, the likely limited remaining service life for aged equipment, and the absence of modernized terminal and gate operating systems leads us to conclude that existing facilities and systems will not be able to support the Cargo Forecasts...*

Unquote.

In addition to the replacement of aging facilities and equipment, PAG will need to develop additional cargo handling and container storage capacity because of the manner in which container cargo is currently handled at the port. The current chassis-intensive operation is resulting in a space constraint and lower productivity at the port terminals. The recent increase in military build-up cargo (pre-fabricated housing units) handled at the port is already resulting in shortage of space. While some additional container storage space may be created at the port by transitioning from chassis to a greater percentage of grounded containers (with resistance expected from shipping companies), the port must develop additional operations and storage area in the immediate future.

PB has estimated that a total capital investment of around \$207 million will be required to replace the ageing facilities and develop the port's capacity to handle potential military cargo. A breakdown of the investments is shown in the table below.

**Exhibit 6: Capital Investment Estimate - Port of Guam**

ITEM DESCRIPTION	BUDGET ESTIMATE
Mobilization and Demobilization	\$7,672,260
All Other Contract Work not stated below	\$2,300,000
Demolition	\$12,002,829
Berth F-5 to F-6 Modernization	\$27,624,542
Buildings	\$9,155,644
Terminal Paving	\$14,600,000
Power, Lighting & Electrical	\$9,342,600
Site Utilities	\$14,964,800
Security	\$9,083,624
Container Cranes	\$16,690,000
Top-Picks & Spreaders	\$3,337,966
Side-Picks	\$1,720,000
Other Yard Equipment	\$3,700,000
Terminal Operating System	\$3,450,000
Gates	\$3,110,000
<b>CAPITAL COST ESTIMATE TOTAL</b>	<b>\$138,754,265</b>
Contingency (29%)	\$40,562,809
Engineering/Permits/CM (19%)	\$27,582,926
<b>TOTAL</b>	<b>\$206,900,000</b>

Source: PB Master Plan Update

However, as of November 2010, PAG has been able to secure only around 50% of the total funds required for port development, or \$104.5 million, through grants and loans guaranteed by the United States Department of Agriculture (USDA), as follows:

- \$25 Million USDA Guaranteed Loan
- \$29.5 Million ANZ Bank commercial Loan, guaranteed 90% by USDA.
- \$50 million DOD Grant, transferred to the MARAD Enterprise Fund.

MARAD has established an Enterprise Fund for the Guam Commercial Port Improvement (GCPI) Program to effectively manage the disbursement and use of these funds for the development at the Port of Guam.

At the request of MARAD, an independent design & engineering consultant, EA Engineering, Science and Technology, Inc. (EA), prepared and submitted a Preliminary Design Cost Estimate Analysis and GCPI Program Cost Estimate as part of the *Preliminary 30% Design Analysis, Evaluation, and Alternatives* task in October 2010. EA reviewed the Phase I-A Preliminary Design Cost Estimate Report and Value Engineering Recommendations dated August 2010 prepared by The Port Authority of Guam (PAG) Owner Agent/Engineer (OAE), Parsons Brinkerhoff, and submitted an independent GCPI Program Phase 1A Cost Estimate, as follows:

- Updated the original Design Cost Estimate for facilities, and revised the total cost of Phase 1A from \$131.8 million to \$149.9 million.
- Developed Value Engineering Recommendations resulting in cost reductions and a revised total Cost Estimate of \$112.1 million for Phase 1A.
- Provided an initial estimate of \$69 million for the first stage of GCPI Program Phase 1A, distributed between civil facilities, buildings and security as shown in the following exhibit:

**Exhibit 7: Program Level Estimate Summary Prepared by EA for Phase 1A Development**

Construction Item	GCPI Estimate Phase 1A	Percent Distribution
Facilities Civil MEP	\$61,563,904	<b>89.2%</b>
Facilities Buildings	\$7,194,999	<b>10.2%</b>
Facilities Security	\$255,906	<b>0.4%</b>
<b>Total</b>	<b>\$69,014,809</b>	<b>100%</b>

Source: EA- Attachment 1 GCPI Program Phase 1A Cost Estimate

It is reasonable to assume that PAG will use the \$104.5 million of available funds for facilities development in Phase 1 A in the same ratio as proposed by the Program Level Estimate shown in the above exhibit.

Furthermore, Substitute Bill No. 333-30 (LS) "AN ACT TO AMEND SECTION 4 OF PUBLIC LAW 30-57, requires that Port of Guam “*shall include the acquisition, either through purchase or lease to own, of at least two (2) Gantry Cranes. Such cranes shall be acquired no later than December 31, 2012*”. PAG will need to secure additional funds to acquire these cranes by 2012, most likely through commercial loans.

Based on the terms of the funding available, the source and proposed use of funds from 2011 to 2013 during the military buildup is shown in the following exhibit.

**Exhibit 8: Source and Use of Funds for Phase 1A**

Source of Funds	Interest	Term Years	Total \$Million	2011	2012	2013
\$3.5M ANZ Bank Loan	6.22%	15	\$3.5	\$3.5		
\$25M USDA Guaranteed Loan	4.00%	40	\$25.0	\$6.5	\$6.0	\$12.5
\$25M ANZ Bank Loan	6.18%	25	\$25.0	\$6.5	\$6.0	\$12.5
\$10M ANZ Bank Loan for Cranes in 2012	6.18%	15	\$10.0		\$10.0	
<b>Total Loans for Phase 1 A in 2011-2013</b>			<b>\$63.5</b>	\$16.5	\$22.0	\$25.0
DOD Grant disbursed through MARAD	0.00%		\$50.0	\$10.0	\$40.0	
<b>Total Funds available in 2011-2013</b>			<b>\$113.5</b>	<b>\$26.5</b>	<b>\$62.0</b>	<b>\$25.0</b>

Source: PAG

The total level of investment for the construction of facilities and equipment is expected to be consistent with the funds available and proportionate to the Program Level Estimate Summary prepared by EA presented earlier in this report, while the annual schedule for construction of facilities and acquisition of equipment has been prepared to reflect the expected construction of the facilities. The construction schedule is presented in the next exhibit.

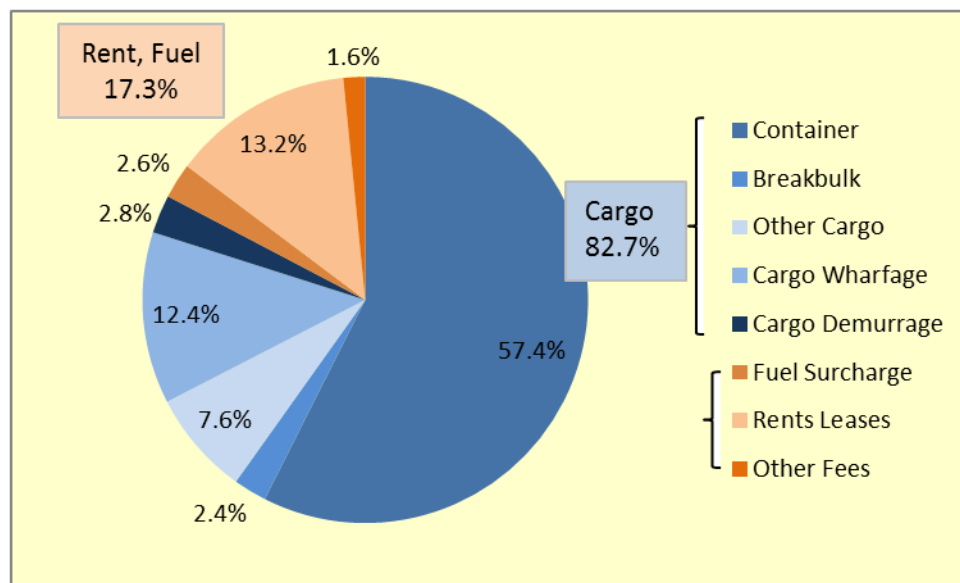
**Exhibit 9: Facilities and Equipment Construction Schedule**

Total Facilities & Equipment Constructed	Percent Distribution	Amount \$Million	2011	2012	2013
Facilities Civil	89.2%	\$80.3	\$3.3	\$52.0	\$25.0
Facilities Buildings	10.2%	\$9.4	\$9.4	\$0.0	\$0.0
Facilities Security	0.4%	\$0.3	\$0.3	\$0.0	\$0.0
<b>Total Facilities</b>		<b>\$90.0</b>	<b>\$13.0</b>	<b>\$52.0</b>	<b>\$25.0</b>
Equipment - Top Loaders		\$3.5	\$3.5		
Equipment- TOS Etc.		\$10.0	\$10.0		
Equipment- Cranes		\$10.0		\$10.0	
<b>Total Equipment</b>		<b>\$23.5</b>	<b>\$13.5</b>	<b>\$10.0</b>	<b>\$0.0</b>
<b>Total Construction Cost</b>		<b>\$113.5</b>	<b>\$26.5</b>	<b>\$62.0</b>	<b>\$25.0</b>

Source: PAG

#### 4. Funding PAG Capital Investments

PAG's current income is not adequate to service the loans required for Phase 1A port development to handle the military buildup cargo. In order to fund these capital improvements, PAG must generate additional revenue through tariff increases applied primarily to the cargo operations that benefit directly from the productivity and service improvements resulting from the construction of additional facilities, and that includes primarily container and other cargo operations. Direct container and other cargo operations contribute 83% of total operating revenue for the port, as shown in the following exhibit (shown in shades of blue), and will be the predominant beneficiary of port capital investments.

**Exhibit 10: FY 2009 PAG Revenue - \$29.9 million**

Source: PAG

## 5. Economic Projections and Financial Analysis

To determine the appropriate level of tariff, a financial cash flow model was developed, which projects potential revenues and expenses for the next decade. While the model was extended to 20 years, the accuracy of any port business projection, including for Port of Guam, diminishes after the first three years, and needs to be revisited and revised each year. The following assumptions were used in projecting the future cargo volumes, revenues and costs:

### Consumer Price Index:

- Port operating costs are likely to increase annually at the rate of growth of the Consumer Price Index (CPI). The CPI indicates the rate of inflation and may also serve as a proxy for economic growth. The data from the Bureau of Statistics shows that since 1997, Guam's Consumer Price Index (CPI) has fluctuated from -1.4% to +11.9%, and is expected to be around 3.3% in 2010. With the caveat that inflation rates are notoriously difficult to predict in advance beyond one or two quarters, a simple economic projection for the purposes of our analysis suggests the Guam economy, and by association PAG's business volume and expenses, can grow at 3.1% per year in the near future.

### Revenue:

- Revenue is a function of specific cargo volumes and the related tariff rate.
- Cargo volumes are based on the most conservative of the projections provided by PB and PAG.
- Container and break-bulk tariff rates and charges are increased each year, and tested for alternative scenarios at different growth rates.

- For other cargo-related revenue items that are a combination of various and non-discrete services, the revenue was increased annually at the same growth rate as container cargo.
- Non-cargo related revenues consist primarily of bunker wharfage rates at June 2010 rates, and increased at the same growth rate as container cargo.
- Interest Income was increased at the rate of inflation.

#### **Costs:**

- Salaries and other expenses related to cargo handling, or the cost of services purchased in Guam, were increased at the estimated CPI rate of 3.1% per year.
- A \$700,000 Management Contract fee was added in the first year, then increased to \$1.2 million and kept constant through the remaining period.
- Operations supplies and Contractual services are increased at the same rate as cargo tariff.
- PAG acquires two gantry cranes funded by a commercial loan of \$10 million in 2012.
- Combined, PAG has to service a total loan of \$63.5 million. PAG's loans of \$63.5 million were amortized over the various loan terms, presented earlier.
- A Working Capital of two months of Operating Expenses is assumed each year.
- Other non-specific costs as well as interest incomes were projected at the rate of Guam CPI.

#### **Results:**

- The financial performance of the port was measured in terms of Operating Income, Net Income, Free Cash Flow, Net Present Value (NPV), and Internal Rate of Return (IRR).
- The Weighted Average Cost of Capital (WACC) is used as the Discount Rate for determining the NPV. The WACC for this analysis is currently 5.514%.
- The capability of the PAG to repay the loan of \$63.5 million was measured according to the criteria specified by the lenders, and the Debt Service Coverage Ratio (DSCR) and Interest Coverage Ratio (ICR) was determined for the various scenarios.

### **6. Tariff Rate Sensitivity Analysis:**

Sensitivity Analysis refers to the testing of the final results and outputs of the financial model, based on varying assumptions and inputs. In this case, the objective of the sensitivity analyses was to determine the level of tariff rate increases that would provide the Port with an adequate rate of return on the port's capital investments, as measured primarily by the Internal Rate of Return (IRR) and a positive Net Present value (NPV). Conventional practice in the port industry suggests that Public Ports should target a return of between 10% to 12% on their capital investments, while privately operated ports expect a return of at least 20% and more on their investments, because (a) their opportunity cost of capital, or return on alternative investments, is higher, and (b) they expect to be compensated for the greater risk they take as private investors.

The Slater and Nakamura Report on the Interim Tariff Review for the Guam PUC Support Port Docket 09-02 states that *"The Guam PUC accept the PAG request for an interim tariff increase as identified in Appendix B (3.4%) and authorize additional increases of up to 2.8% for 2011 and 2012 pending completion of the full tariff review."*

With the objective of achieving a maximum IRR of 12%, the financial model tested the impact of varying the annual growth in tariff rates from 2.8% to 4.34%, and the results of the analyses are presented next.

**Exhibit 11: Results of Tariff Rate Sensitivity Analysis with \$63.5 Million Debt**

Tariff	Annual Tariff Increase %	Project IRR %	NPV \$ Million	Remarks
<b>PUC Approved</b>	2.80%	2.34%	<b>(\$15.7)</b>	<b>IRR &amp; NPV NOT Acceptable</b>
<b>PUC Approved</b>	3.40%	6.97%	\$9.1	<b>IRR &amp; NPV NOT Adequate</b>
<b>Minimum Acceptable Tariff</b>	<b>3.95%</b>	<b>10.12%</b>	<b>\$33.3</b>	IRR Acceptable
<b>Maximum New Tariff</b>	4.34%	12.04%	\$51.5	IRR Ideal

Source: Cornell analysis

- The PUC approved annual tariff rate increase of 2.8% will provide a negative Net Present Value (NPV) of -\$15.7 million which indicates that the port loses \$15.7 million on its capital investment of \$113.5 million, and is not acceptable. There may be no capital available for replacement of aged assets in the future years.
- The current rate increase of 3.4%, similar to that approved by PUC in 2009, will result in an IRR of 7.97%, and is generally considered too low for a public port. As importantly, the NPV of \$9 million will not be adequate as a reserve for future replacement of assets.
- A rate increase of 3.95%, will provide an acceptable IRR of 10.1% and adequate NPV of \$33.3 million for the current level of investment.
- A rate increase of 4.34% achieves an improved IRR of 12%, while also generating a healthy NPV of \$51.5 million.

It is important to note that the tariff increase of 3.95% to 4.34% produces an acceptable IRR and NPV for the current level of investment of \$133.5 million, \$50 million of which a grant and \$63.5 million is a commercial loan. An additional \$100 million of debt for investment in the port to handle the military buildup cargo as estimated by PB, without an increase in cargo volume and revenue will plunge the port into a negative NPV of over \$90 million and an IRR of -2.6%, if the tariff rate increase remains at 3.95%. With a total debt of \$163.5 million, PAG will require a tariff rate increase of 5.9% to achieve an IRR of 5.5% and an increase of 7.4% to achieve an IRR of 10%, as shown below.

**Exhibit 12: Estimated PAG Tariff Impact with \$163.5 Million Debt**

Annual Tariff Increase %	Project IRR %	NPV \$ Million
<b>3.95%</b>	<b>-2.60%</b>	<b>(\$99.80)</b>
5.90%	5.52%	\$0.0
7.40%	10.12%	\$94.2

Source: Cornell analysis (Based on broad estimates, not accurate loan terms)

## 7. PAG Financial Projections

The financial results presented in this section are based on a tariff increase of 3.95% each year to the year 2030, while expenses are increased at the estimated annual rate of increase of Guam CPI of 3.1%. For port revenues to keep pace with expenses, port tariffs are typically increased each year at a rate higher than the annual rate of increase of port expenses, and a tariff rate increase of 3.95% to 4.34% satisfies this criteria. The financial projections for PAG for an annual tariff rate increase of 3.95% with a debt of \$63.5 million are presented next.

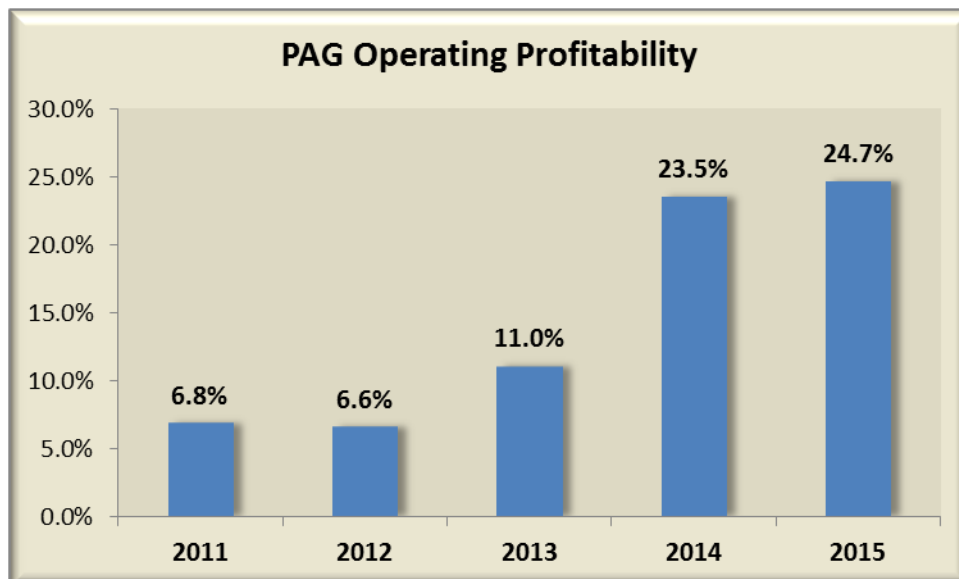
**Exhibit 13: Financial Projections - Port of Guam with 3.95% Annual Tariff Increase & \$63.5 Million Debt**

Description	ACTUAL	EOY Estimate	PROJECTED (\$ Million)				
	2009	2010	2011	2012	2013	2014	2015
<b>OPERATING REVENUE</b>							
- CT Chassis	4.8	4.9	6.7	7.9	9.1	11.8	12.6
- CT Grounded	10.0	10.7	10.6	12.6	14.4	18.6	20.0
- CT Transshipment	2.4	2.6	3.6	4.3	4.9	6.3	6.8
- Breakbulk	0.7	1.5	2.5	2.9	3.6	3.9	3.2
- Other Cargo Related	2.3	3.0	3.1	3.2	3.4	3.5	3.6
- Wharfage	3.7	4.1	4.3	4.4	4.6	4.8	5.0
- Fuel Surcharge	0.8	0.6	0.6	0.6	0.6	0.6	0.6
- Cement	0.0	0.0	0.1	0.4	0.7	1.0	0.9
- Non-Cargo Revenue	3.9	5.8	5.8	5.9	5.9	6.0	6.1
- Demurrage	0.8	1.1	1.1	1.2	1.2	1.2	1.3
- Facility Maintenance Fee	0.0	0.6	0.7	0.7	0.7	0.7	0.8
- Other Fees	0.5	0.4	0.4	0.4	0.4	0.4	0.4
<b>TOTAL REVENUE</b>	<b>29.9</b>	<b>35.3</b>	<b>39.5</b>	<b>44.5</b>	<b>49.4</b>	<b>58.9</b>	<b>61.3</b>
<b>OPERATING EXPENSE</b>							
Management Fee	0.0	0.0	0.7	1.2	1.2	1.2	1.2
Salaries	12.2	13.0	14.8	15.2	15.7	16.2	16.7
Benefits	3.7	5.6	6.4	6.6	6.8	7.0	7.2
Operations Supplies- Cargo	1.8	1.6	1.6	1.7	1.8	1.8	1.9
Contractual	4.8	5.1	5.3	5.5	5.7	6.0	6.2
Other	1.4	1.1	1.1	1.1	1.2	1.2	1.2
Utilities	2.2	2.5	2.6	2.7	2.8	2.9	3.0
<b>TOTAL O&amp;M EXPENSES</b>	<b>26.0</b>	<b>28.9</b>	<b>32.6</b>	<b>34.1</b>	<b>35.2</b>	<b>36.3</b>	<b>37.5</b>
DEPRECIATION	2.7	2.8	4.2	7.5	8.7	8.7	8.7
<b>TOTAL OPERATING EXPENSES</b>	<b>28.8</b>	<b>31.7</b>	<b>36.8</b>	<b>41.6</b>	<b>43.9</b>	<b>45.0</b>	<b>46.2</b>
<b>(Loss) Earning from Operations</b>	<b>1.15</b>	<b>3.63</b>	<b>2.70</b>	<b>2.93</b>	<b>5.44</b>	<b>13.87</b>	<b>15.14</b>
<b>Operating Profit Percent</b>	<b>3.8%</b>	<b>10.3%</b>	<b>6.8%</b>	<b>6.6%</b>	<b>11.0%</b>	<b>23.5%</b>	<b>24.7%</b>
<b>OTHER INCOME/(EXPENSE)</b>							
Retiree Supplemental /COLA/							
Medical, Dental & Life Insurance	(1.6)	(3.3)	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)
Federal Expense	(0.0)	(0.0)	0.0	0.0	0.0	0.0	0.0
Federal Reimbursements	0.4	7.2	0.0	0.0	0.0	0.0	0.0
Insurance Reimbursements	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous Income- Interest	0.4	2.2	0.30	0.31	0.32	0.33	0.34
<b>TOTAL OTHER INCOME/EXPENSE</b>	<b>1.37</b>	<b>6.05</b>	<b>(1.74)</b>	<b>(1.73)</b>	<b>(1.72)</b>	<b>(1.71)</b>	<b>(1.70)</b>
<b>NET INCOME/LOSS</b>	<b>2.52</b>	<b>9.67</b>	<b>0.96</b>	<b>1.20</b>	<b>3.72</b>	<b>12.16</b>	<b>13.44</b>

Source: Cornell analysis

PAG's operating profitability for the next five years with a debt of \$63.5 million is shown below. An additional \$100 million of debt, if required for port expansion, will reduce PAG's profitability considerably between 2013 and 2015.

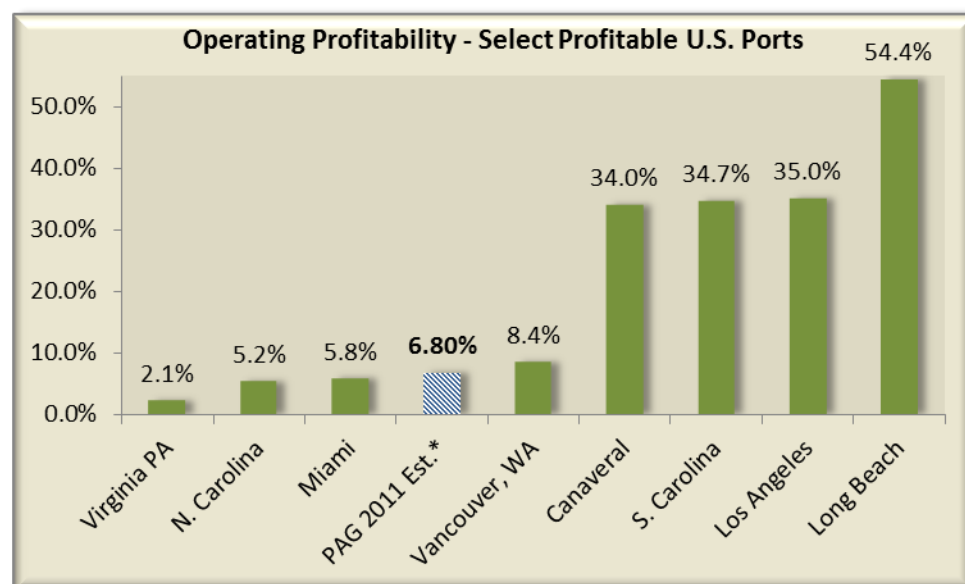
**Exhibit 14: Port of Guam Profitability with \$63.5 Million Debt**



Source: Cornell analysis

The Operating Profitability of PAG is projected to be 6.8% in 2011 which is consistent with other U.S. operating ports, as shown in the following exhibit. Non-operating or landlord ports, primarily on the U.S. West Coast, are typically more profitable.

**Exhibit 15:**



Source: Cornell Analysis based on MARAD Public Port Finance Survey 2006

## 8. PAG's Debt Repayment Capability

The ANZ Bank has presented the terms for loans to PAG, with specific conditions including the interest rates, term of the loans and management of risk. These terms have been used in developing the financial model. To ensure against risk of default, the banks require that PAG maintain the following minimum risk coverage ratios:

- Debt Service Coverage Ratio (DSCR) of 1.30 to 1, calculated as follows:

$$\frac{\text{Net Profit (Loss) Before Depreciation, Interest, Taxes and Amortization}}{\text{Total Annual Principal and Interest Payments}}$$

- Interest Coverage Ratio (ICR) of 1.50 to 1, calculated as follows:

$$\frac{\text{Net Profit (Loss) Before Depreciation, Interest, Taxes and Amortization}}{\text{Total Annual Interest Expense}}$$

These risk ratios for PAG for the amount of loan of \$63.5 million are presented below, and show that PAG complies adequately with the loan covenants. The banks require a minimum DSCR of 1.30 and ICR of 1.50, while PAG's cash flow is sufficient to generate DSCR from 1.35 to 4.69, and ICR of 1.76 to 7.06. It should be noted that the results subsequent to the year 2013 may decline, since PAG is likely to secure additional debt for the amount of \$100 million, and this will diminish the values of ICR and DSCR.

**Exhibit 16: PAG's Ability to Service Loan of \$63.5 million**

Loan Covenants	Minimum Required by Lender	Port of Guam Projections				
		2011	2012	2013	2014	2015
<b>DSCR</b>	<b>1.30</b>	1.35	1.80	2.61	4.41	4.69
<b>ICR</b>	<b>1.50</b>	1.76	2.51	3.73	6.47	7.06

Source: Cornell analysis based on ANZ Loan Terms

## 9. Tariff Equalization for Grounded and Chassis Containers

The container handling charges in 2010 for chassis and grounded containers are \$82.72 and \$155.10 per box respectively, and do not reflect the level of service provided by PAG for each type of container. When combined with the stevedoring rate of \$108.57 per container, the total port charges are \$191.29 for a container on chassis and \$263.67 for a grounded container.

If approved by the PUC and applied to the container tariffs in 2011, a 3.95% increase in both container stevedoring and container handling charges will increase the total per container charges to \$198.95 for chassis and \$274.08 for grounded containers. This is shown in the following exhibit.

**Exhibit 17: Increase of 3.95% in Container Rates from 2010 to 2011**

Rate Per Box	2010 CHASSIS	2010 GROUND	2011 CHASSIS	2011 GROUND
Stevedoring	\$108.57	\$108.57	\$112.86	\$112.86
Handling	\$82.72	\$155.10	\$85.99	\$161.23
<b>Total Charge per Box</b>	<b>\$191.29</b>	<b>\$263.67</b>	<b>\$198.85</b>	<b>\$274.08</b>

Source: Cornell analysis

The current container-on-chassis operation at the Port of Guam is resulting in a space constraint and lower productivity at the port terminals. Most major ports on the mainland are converting to over 95% stacked (grounded) operations, and steamship lines are in turn minimizing their investment in chassis inventory by requiring trucking companies to provide their own chassis. By changing from chassis to a greater intensity of grounded operations, the Port of Guam can maximize space utilization and free up additional yard space prior to investing in the development of additional yard space as per the latest Master Plan. Equalizing of tariffs between chassis and ground containers can be an effective tool to encourage port users to switch gradually from chassis to grounded operations, without affecting the overall port-related transportation costs to Guam consumers.

For these reasons, PAG needs to simplify and equalize the rates for handling and storage of grounded and chassis containers, in a manner that the Guam consumer's transportation costs are not affected. Several alternatives for simplifying the container rates were tested with the following criteria: (a) the total port costs for container handling to shippers and consignees in Guam are not affected, (b) the rates charged reflect the services provided by PAG to its customers, and (c) container handling and storage costs are controlled while container handling productivity and space utilization are maximized.

The most reasonable and fair solution which meets these criteria is to use a volume-weighted average of chassis and grounded rates, with the result that there is no change in the total combined charges to the port's customers, and by association Guam consumers should not have to pay any more than they are currently paying for the port-related costs of imports. This is achieved by equalizing the handling rate to \$127.11 in 2010 and \$132.13 in 2011 for both chassis and grounded containers. The following exhibit shows the proposed change in total tariffs for grounded and chassis containers, if the total container charges are equalized to \$235.68 per box for both chassis and grounded containers in 2010, to \$245 in 2011.

**Exhibit 18: Proposed Equalization of Container Tariffs**

Rate Item	2010 CHASSIS	2010 GROUND	2011 CHASSIS	2011 GROUND
Current Stev. & Hand. Rate	\$191.29	\$263.67	\$198.85	\$274.08
<b>New Equalized Rate</b>	<b>\$235.68</b>	<b>\$235.68</b>	<b>\$245.00</b>	<b>\$245.00</b>
Change US\$ Per Box	\$44.39	(\$27.99)	\$46.14	(\$29.10)
Percent Change	23%	-11%	23%	-11%

Source: Cornell analysis

The exhibit shows that in 2011 with a tariff increase of 3.95%, grounded container handling will cost the users \$29.10 less than with the existing tariff structure, while containers on chassis will pay \$46.14 more per box, thus encouraging the chassis users to convert their operations to grounded operations.

The impact of this tariff equalization proposal on PAG's revenue for 2011, if implemented fully, is presented below.

**Exhibit 19: No Impact on PAG Revenue or PAG Customers as a Result of Tariff Equalization**

Container	PAG 2011 Revenue \$ Million			Percent Change
	Revenue At Current Tariff Structure (Stev.+Hand.)	Revenue At Equalized Rate (\$245/Box)	Change \$	
<b>Chassis</b>	\$5.4	\$6.7	\$1.3	23%
<b>Ground</b>	\$11.9	\$10.6	(\$1.3)	-11%
<b>Total Revenue</b>	<b>\$17.3</b>	<b>\$17.3</b>	<b>\$0.0</b>	<b>0%</b>

Source: Cornell analysis

As shown above, an equalization of rates results in no change in PAG annual revenue and therefore no change in the combined costs to the port's customers and users. It is expected that since there will be no change to the overall cost to the port users, Guam consumers will similarly see no change in their transportation costs as a result of the equalization of container rates proposed here. The expected impact of this rate equalization is as follows:

- As PAG does not gain or lose any revenue as a result of the proposed rate equalization and Guam consumers should see no increase in their port-related costs, challenges to this rate proposal are not likely be supported by Guam consumers.
- The equalization to a single rate will encourage chassis operators to convert to grounded operations, thus allowing the port to improve space utilization, increase productivity, and at a minimum delay the need for investment in developing additional storage space.

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## 10. Conclusion and Recommendations

Based on the results of the financial analysis, it is recommended as follows:

- Container and general cargo tariffs need to be increased annually by a minimum of 3.95% to generate an adequate return on PAG's investments in developing and maintaining the port infrastructure, and improving customer service and productivity.
- Any debt incurred by the port in addition to \$63.5 million will require a review and further adjustment in rates.
- Container stevedoring and handling rates should be combined and equalized to a single rate of \$245 per box for both chassis and grounded containers in 2011. This will ensure that PAG is fairly compensated for the services provided to the cargo but with no increase in total container handling charges to the port's customers, while at the same time freeing up space and increasing productivity at the port.
- The port must, without fail, review its financial condition, cash flow and tariffs each year and adjust the tariffs to ensure a positive cash flow after servicing its debt.

The tariff analysis is presented next.

## **V. Tariff Analysis and Recommendations**

Prior to the enactment of Law 30-52 in 2009, the current Port of Guam tariff was last altered in 1993. During this period, PAG was compelled to generate additional revenues to compensate for rising operating costs by issuing policy memoranda increasing service charges and modifying tariff regulations. While this procedure was adequate to cover ordinary operating expenses, it provided no funding for major maintenance, replacement of equipment and capital expansion for port growth, and improvement in port productivity.

Without updating the Tariff during this period, the administration of the Tariff and subsequent memoranda has become less manageable by PAG and more complex for port users. In 2009, legislation was passed that placed Tariff rate and regulation approval under the Public Utilities Commission (PUC). In October 2009 the PUC approved a temporary 3.4% increase in all Tariff and leasehold rates, and later a Facility Maintenance Fee was also approved effective February 1<sup>st</sup> 2010.

The previous section has provided the financial and cash flow analysis supporting the current and subsequent annual tariff increases to generate sufficient revenue for port operation and provide for debt service payments to implement the Master Plan.

This section provides the rationale for increasing PAG's primary cargo tariffs, equalizing rates for grounded and chassis containers, and suggests tariff policy changes that would simplify the tariff structure and make it more responsive to changes in the business and market environment. Appendix A attached at the conclusion of this section includes the complete tariff document with proposed tariff changes, restructured for greater flexibility and customer responsiveness.

### **1. Analysis of Guam's Container Tariff Rate with Comparable U.S. Ports:**

The majority of PAG's revenue is derived from container operations, and approximately 90% of this consists of Dockage, Wharfage, Stevedoring, Handling and the Facility Maintenance Fee. The overall cost of these port services at Guam is compared with the cost at U.S. ports with similar operations, for a 712-foot Matson vessel that called PAG in the first week of July 2010 with a total of 839 local and transshipment containers. The results of the comparison are presented in the following exhibit.

**Exhibit 20: Vessel Revenue at PAG Compared with Similarly Operated U.S. Ports**

Primary Revenue Source	Guam	S. Atlantic	Gulf of Mexico	N. Atlantic
Dockage	\$3,119	\$16,661	\$11,534	\$14,895
Facility Maintenance Fee	\$11,625	\$0	\$0	\$0
Stevedoring Fees	\$71,113	\$138,435	\$130,045	\$138,435
Wharfage	\$33,150	\$35,154	\$22,181	\$32,559
Container Handling	\$65,111	\$70,341	\$58,734	\$74,839
Transshipment Fees	\$32,045	\$0	\$0	\$0
<b>Sub-Total Primary Services</b>	<b>\$216,163</b>	<b>\$260,591</b>	<b>\$222,494</b>	<b>\$260,728</b>
Secondary Revenue Source				
Channel Fee	\$642	\$0	\$1,085	\$0
Line Handling (Avg. )	\$1,241	\$744	\$744	\$740
Harbor Master Fee	\$0	\$50	\$0	\$0
Vessel Security Fee	\$156	\$4,824	\$750	\$4,824
Cargo Security Fee	\$1,039	\$0	\$2,391	\$0
Fuel Surcharge	\$5,694	\$0	\$998	\$0
Reefer Power - 2 days	\$4,966	\$4,900	\$2,744	\$4,900
<b>Sub-Total Secondary Services</b>	<b>\$13,738</b>	<b>\$10,518</b>	<b>\$8,712</b>	<b>\$10,464</b>
<b>Total Revenue</b>	<b>\$229,901</b>	<b>\$271,109</b>	<b>\$231,206</b>	<b>\$271,192</b>

	Guam	S. Atlantic	Gulf of Mexico	N. Atlantic
<b>Revenue Per Container</b>	<b>\$274.02</b>	<b>\$323.13</b>	<b>\$275.57</b>	<b>\$323.23</b>
<b>More (Less) Than Guam/Container</b>		<b>\$49.12</b>	<b>\$1.56</b>	<b>\$49.21</b>

Source: Cornell analysis from PAG tariffs & U.S. stevedore

Rates at Guam are \$49 less than the North and South Atlantic ports, but same as the Gulf port.

Currently Container Yard (CY) handling fees are not charged for transshipment cargo at Guam, and if this is applied similar to East Coast ports, the average rate at Guam would be \$15 to \$30 more, or \$289 and \$302 per chassis and grounded container respectively.

Our investigation also indicates that containers on the West Coast charge about \$20 more for stevedoring than East Coast ports, but CY handling is done by private terminal operators and their rates are not known, but may be an additional \$20 to \$30 per container. On the average, it appears Guam rates are \$35 to \$60 less than at West Coast ports.

This comparison with similarly operated U.S. ports suggests that conservatively, container rates at Guam may be increased by 10% to 15% in 2011, and still remain competitive with U.S. mainland ports. However, productivity at Guam will need to be improved to sustain the higher rates.

## **2. Chassis Storage & Container Yard Space – The Case for Equalizing Rates**

Container-on-chassis operations at Guam are utilizing significantly greater storage space than a grounded container operation for the same volume of containers. The lower density storage of chassis containers causes the available storage space at the port to be fully utilized earlier than with the higher density storage operation of grounded containers, resulting in an accelerated investment in expanding yard storage space at the port. A conversion from chassis to a greater percentage of grounded containers at PAG will better utilize existing space, increase productivity, and is likely to delay capital investment for yard expansion.

The 2007 Master Plan and the 2002 Cornell Study recommended that the port transition to a “stacked” (grounded containers stacked one on another up to four or more containers high) system, and steamship lines store their chassis at off-port locations where land and storage costs are less expensive. The port’s major customers have resisted this change, primarily because the handling rate for stacked containers is \$72.38 more than for a container on chassis. As a result the port is placing containers on wheels, which requires more paved land than the port is presently capable of providing. When cargo volume at the port grows with the military buildup, this problem will be compounded. To complicate this issue, a “chassis” operation also requires the storage of empty chassis and empty containers for extended periods of time.

PAG can encourage the conversion of chassis to grounded containers by equalizing the container handling tariffs for both types of containers, as presented in detail in the previous financial section. Specifically, the container handling rates should be equalized to \$127.11 per box for both chassis and grounded containers in 2010, from \$82.72 per box for a chassis and \$155.10 per box for a grounded container. The corresponding increase in handling rate for 2011 will be \$133.13 per box. By eliminating the differential between the two types of container operations, shipping companies will no longer have any incentive to use chassis, while at the same time the total costs to all port users as well as PAG’s revenue will remain unchanged. It is expected that shipping companies will similarly not increase their charges to Guam’s consumers.

During the transition to a predominantly grounded operation, steamship lines will be encouraged to store their empty chassis off-port with application of port storage rates higher than the rates available for off-port storage. A small number of chassis will remain at the terminal for refrigerated containers, hazardous cargo in containers and emergency shipments which must move directly from the vessel and out of the port gate complex.

Upon approval of the new tariff by the PUC, PAG will need to acquire the equipment necessary to convert its operation to a stacked system. Including Rubber Tired Gantries, Toplifters and Stevedoring Chassis. This change should be timed to activity levels and space constraints during the transition period, with a target of a 95% grounded operations when construction is complete.

## **3. Unanticipated and Emergency Tariff Adjustments**

Port tariffs in the U.S. are administered by port management and, in some cases, verified by their Board of Directors at their regular monthly meetings. In Guam the Public Utilities Commission has been appointed to review and approve all changes to the Port’s tariff without a provision for emergency situations such as the following:

- From time to time cargoes and cargo handling situations occur at the port without notice and the tariff may not have listed the service and the price to be charged. The Guam port,

however, does not have the authority to implement a charge or enter into a contract without permission of the PUC.

- The same type situation may occur when rules and regulations in the tariff have failed to anticipate a situation that must be implemented immediately to protect the port or to handle a situation that is inconsistent with its operating policies.
- While a port deals with its customers on a commercial basis, from time to time it is necessary for charges to be reduced when management agrees that a revenue producing service may be lost unless competition for the service is met.

In the past the port handled these matters with Board Memoranda to the shippers and inserted the Memo into the tariff immediately as part of the tariff. Earlier, the legal section of this report addressed the “timeliness” of action by the PUC, and its implications. History shows PAG has faced these unanticipated and unplanned tariff situations two to five times a year, and must establish a mechanism to deal with them in a timely and legal manner.

The following addendum to the Tariff proposes to address this issue. This will allow the Port Board and Management to operate in the normal course of business without interruption of services and comply with the procedures of the PUC without changes to any of the laws under which it operates.

*“Amendments or revisions to this tariff, its Definitions, Rules, Regulations, Cargo Services or Rates, shall be made by the Port Authority Board of Directors in accordance with formally adopted procedures consistent with requirements established under the Administrative Adjudication Act of the Federal Maritime Commission and approved by the Guam Public Utilities Commission.*

*In the event of an unanticipated or emergency occurrence, procedures for such amendments may be set forth by the Port Authority Board of Directors to determine and implement a tariff for which there is no established precedence. Such changes to the tariff will be submitted at the next regular meeting of the Public Utilities Commission for approval.”*

#### **4. Rationalization and Clarification**

As a result of numerous “Board Memoranda” issued after 2002, the current tariff has become unwieldy and complex for port users. To make it more user-friendly and easier to apply, the new tariff has been rationalized and simplified by incorporating the Board Memoranda in the main body of the tariff. The language has been modified to link each tariff item clearly and unambiguously to the service provided by the port. Certain rate structures have been altered to address current operating and financial issues. Other minor changes to the language and structure of the tariff have been made to improve the clarity and function of each tariff item.

#### **5. Effective Dates of the Tariff and Future Adjustments**

Since labor rates are reviewed and changed on October 1<sup>st</sup> and this is also the beginning of the Fiscal Year, the following schedule is recommended for annual tariff review and modification:

- |  |                       |
|--|-----------------------|
| • PAG to determine & justify changes for the following year. | March 1 <sup>st</sup> |
| • Present to the Board for approval                          | March Board Meeting   |
| • Prepare justification for PUC                              | Month of March        |
| • Present changes to PUC for hearings                        | April 1 <sup>st</sup> |
| • Approval by PUC  | July 1 <sup>st</sup>  |

- 
- Publish approved Tariff changes to customers
  - Tariff Adjustments Effective

August 1<sup>st</sup>  
October 1<sup>st</sup>

## **Appendix A – Recommended Terminal Tariff**

Attached.