Jose D. Leon Guerrero Commercial Port of Guam
Master Plan Update 2007

# Financial Feasibility Study Report

Prepared for

## The Port Authority of Guam

August 2008

Performed by

**PB International, Inc.**

In Association with BST Associates

**Jose D. Leon Guerrero Commercial Port of Guam**
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This study report was prepared under contract with the Port Authority of Guam, Government of Guam on behalf of the United States Territory of Guam, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the Port Authority of Guam, on behalf of the United States Territory of Guam and does not necessarily reflect the views of the Office of Economic Adjustment.

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This Financial Feasibility Study Report was prepared at the direction of and on behalf of the Port Authority of Guam and its Board of Directors. It offers alternative financial scenarios and options for consideration based on direction provided by the Port's Board of Directors and Management. The alternatives contained herein are representative in nature and subject to the policy and decisions of the Port Authority of Guam's Board of Directors, the Governor of Guam, and/or the Guam Legislature until specific policy directives are finalized and financial framework(s) identified for execution.

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# Table of Contents

Executive Summary ..... 1
Introduction ..... 1
Master Plan CIP Capital Requirements ..... 1
Port Funding in the United States ..... 2
Major Sources of Financing for PAG ..... 3
Major Sources of Funding for PAG ..... 3
Financial Analysis Model ..... 4
Financial Performance Scenarios ..... 5
Federal Funding Considerations ..... 11
No DOD Buildup Scenario ..... 13
Contribution Approach for Assessing Extent of Funding ..... 14
Conclusions & Recommendations ..... 15
Immediate Next Steps ..... 16
Section 1 Introduction ..... 17
1.1 Background ..... 17
1.2 Study Purpose & Goals ..... 17
1.3 Study Scope & Approach ..... 18
1.4 Report Organization ..... 19
Section 2 Port Financial History ..... 20
2.1 PAG Financial History ..... 20
2.2 Key Financial Management Actions Since 1993 ..... 21
Section 3 Financial Model Framework & Design ..... 22
3.1 General Model Framework ..... 22
3.1.1 Objectives ..... 22
3.1.2 Model Architecture ..... 22
3.1.3 Revenue & Expense Format ..... 23
3.1.4 Model Calibration with FY2007 Audited Results ..... 24
3.2 Detailed Model Design ..... 24
3.2.1 Volume Forecast ..... 24
3.2.2 Financial Model Organization ..... 24
3.3 Model Outputs ..... 26
3.3.1 Operating/Financial Performance ..... 26
3.3.2 Investment Analysis ..... 26
3.3.3 Borrowing Analysis ..... 26
Section 4 Financing & Funding Options ..... 28
4.1 Port Funding in the United States ..... 28

4.2 Major Sources of Financing (Borrowing) for PAG ..... 30
4.2.1 Revenue Bonds ..... 30
4.2.2 USDA Community Facilities Guaranteed Loan Program ..... 30
4.3 Major Sources of Funding for PAG ..... 31
4.3.1 U.S Department of Transportation Maritime Administration (MARAD) ..... 31
4.3.2 U.S. Department of Defense ..... 33
4.3.3 Other Federal Grant & Loan Programs ..... 33
4.4 International Financing & Funding Mechanisms ..... 35
4.4.1 Japanese Government Finance Sources ..... 35
4.5 Public-Private Partnership Mechanisms ..... 36
Section 5 Financial Performance Scenarios ..... 39
5.1 Key Principles ..... 39
5.2 Scenario Assumptions ..... 39
5.3 General Findings ..... 41
5.4 Preliminary Financial Scenario Analysis ..... 42
5.4.1 Preliminary Scenarios ..... 42
5.4.2 Changes to Preliminary Model & Assumptions ..... 42
5.4.3 GEDCA and BOFA Detailed Financing Analyses ..... 43
5.5 Refined Financial Scenario Analysis ..... 43
5.5.1 Scenario A – Base Case ..... 46
5.5.2 Scenario B – Base Case + Military Surcharge ..... 47
5.5.3 Scenario C – Base Case + Military Surcharge & Staffing Reduction ..... 47
5.5.4 Scenario D – Base Case + PMC for Maintenance ..... 48
5.5.5 Scenario E – PMC for Cargo Operations ..... 49
5.5.6 No DOD Buildup ..... 50
5.5.7 Matson/Horizon Crane Proposal ..... 52
5.6 Economic Impact of Port Tariffs ..... 52
5.7 Summary & Analysis ..... 54
5.7.1 PAG Borrowing Capacity ..... 54
5.7.2 Feasibility of Scenarios ..... 54
5.7.3 Key Issues ..... 55
Section 6 Financing Framework Considerations ..... 57
6.1 Overview of Funding/Financing Program Drivers ..... 57
6.1.1 Dependency of DOD Capital Program on Port ..... 57
6.1.2 Master Plan CIP Capital Requirements ..... 58
6.1.3 Master Plan CIP Cash Flow Needs ..... 59
6.1.4 Maintenance & Replacement Capital Needs ..... 59
6.1.5 No Other Alternatives for Moving DOD Cargo ..... 59

6.2 Opportunities & Constraints for Master Plan CIP Capital ....59
6.2.1 Grants & Appropriations (Funding)....60
6.2.2 PAG Bond or Loan Financing ....60
6.2.3 Capital Furnished by a PMC....61
6.2.4 Developing Guidelines for Choosing a Mix of Capital Sources....61
6.3 Contribution Approach for Assessing Extent of Funding ....62
6.3.1 Capital Improvement Needs With & Without DOD Buildup....62
6.3.2 Contributory Needs & Resources for Port Modernization & Expansion....62
6.4 Risks & Returns Related to PAG Financing ....64
6.4.1 Business Risks for Meeting Loan Payments....64
6.4.2 Return on PAG Resources....65
6.4.3 Comparison of PAG Return on Assets Using MARAD Methodology....66
6.5 Other Considerations for Capital Framework ....67
6.5.1 Tariff Setting Considerations....67
6.5.2 Net Present Value & IRR of Scenarios....67
6.6 Implications for Financing Framework....68
Section 7 Conclusions & Recommendations....69
Appendix 1 List of Stakeholder Meetings....71
Appendix 2 Data Collection....72
Data Collection Questionnaire....72
List of Data Files Received....76
Appendix 3 Master Plan CIP Layout ....78
Appendix 4 Miscellaneous Scenario Tables & Charts....80
Appendix 5 Preliminary Financial Scenarios....85
Existing Conditions Scenario ....85
Pricing Scenarios....85
Crane Productivity Scenarios....86
Staff Reduction Scenarios....86
Combination Scenario ....86
Financing Scenarios....87
PMC Scenario....87
No DOD Scenario....87
Appendix 6 GEDCA/BOFA Pro-forma Analyses....89

# Figures

Figure 4.5-1 Decision Process on PPPs ....36
Figure 6.4-1 PAG 2030 Working Capital Balance Various Bond/Loan Amounts (Scenario C) ....66
Figure A3-1 Master Plan Concept – Basis for Master Plan CIP Capital Estimates ....79
Figure A4-1 Master Plan CIP Cargo Forecasts....81

Figure A4-2 Master Plan CIP Capital and Maintenance & Replacement Capital Expenditures....83
Figure A4-3 FTE Estimates for Base Case Scenario A....84
Figure A5-1 Summary of Preliminary Financial Analysis Scenarios....88

# Tables

Table E-1 Port Modernization & Expansion Capital Cost Estimate ($2008)....2
Table E-2 Capital Cost Estimate Cash Flow Estimate....2
Table E-3 Sources of U.S. Port Funding for Capital Improvements (% of Total)....2
Table E-4 Master Plan CIP Amounts Expended, Allocated or Targeted to Date....4
Table E-5 Summary of PAG Borrowing Capacity & PMC Capital Contribution....10
Table E-6 DOD Expenditures for Base Relocation to Guam (2007-2015)....12
Table E-7 Comparison of Master Plan CIP & No DOD Buildup Scenarios....14
Table 2.1-1 PAG Financial Performance Indicators, Fiscal Years 2003-2007....20
Table 2.1-2 PAG Financial Performance Indicators, Fiscal Years 1998-2000....20
Table 3.1-1 Financial Model Calibration Results....24
Table 4.1-1 Sources of U.S. Port Funding for Capital Improvements (% of Total)....29
Table 4.5-1 Public Private Investments in Seaports ($ Millions)....37
Table 5.5-1 Summary of Financial Analysis Scenarios & Borrowing Capacities....45
Table 5.5-1 Capital Outlays for Master Plan CIP & No DOD Buildup Comparison....51
Table 5.6-1 Port Tariff Rates for Roundtrip Container to/from Guam Assuming Base Case Escalation to 2030 52
Table 5.6-2 Tariff Impact on Retail Costs....53
Table 5.7-1 Summary of PAG Borrowing Capacity & PMC Capital Contribution....54
Table 6.1-1 DOD Expenditures for Base Relocation to Guam (2007 through 2015)....57
Table 6.1-1 Port Modernization & Expansion Capital Cost Estimate (2008 Dollars)....58
Table 6.3-1 Present Value of PAG Contribution for Assessing Funding....63
Table 6.4-1 Impact of Loan Amount on Residual Working Capital (Scenario C)....65
Table A4-1 Master Plan CIP Capital Cash Flow....82

# Abbreviations

| | |
|---|---|
| AAPA | American Association of Port Authorities |
| BOFA | Banc of America Securities LLC |
| BSP | Bureau of Statistics & Plans |
| CAPEX | Capital Expenditure |
| CFS | Container Freight Station |
| CIP | Capital Improvement Program |
| CIS | Container Inspecting Station |
| CNMI | Commonwealth of the Northern Marianas Islands |
| CSB | Citizens Security Bank |
| CZM | Coastal Zone Management |
| DOD | Department of Defense |
| DOL | Department of Labor |
| DPW | Department of Public Works |
| EDA | Economic Development Administration |
| FFS | Financial Feasibility Study |
| FSM | Federated States of Micronesia |
| FY | Fiscal Year |
| GEDCA | Guam Economic Development and Commerce Authority |
| GPA | Guam Power Authority |
| GRT | Gross Revenue Tons |
| GWA | Guam Waterworks Authority |
| IRR | Internal Rate of Return |

| | |
|---|---|
| JDLG | Jose D. Leon Guerrero |
| LT | Long Ton |
| MARAD | Federal Maritime Administration |
| MI | Marshall Islands |
| MT | Metric Tons |
| MT | Empty Boxes |
| NAVFAC | Naval Facilities Command |
| NEPA | National Environmental Policy Act |
| NPV | Net Present Value |
| OOG | Oversized (Out Of Gage) Boxes |
| OEA | Office of Economic Adjustment, Department of Defense |
| OIA | Office of Insular Affairs |
| PAG | Port Authority of Guam |
| PMC | Performance Management Contract |
| PMT | Project Management Team |
| PMX | PANAMAX |
| PPMX | Post PANAMAX |
| RFP | Request for Proposals |
| SDDC | Military Surface Deployment and Distribution Command |
| ST | Short Ton |
| TEU | Twenty Equivalent Unit |
| TGS | Twenty Foot Ground Slot |
| USACE | U.S. Army Corps of Engineers |
| USCG | U.S. Coast Guard |

| | |
|---|---|
| USDA | U.S. Department of Agriculture |
| USWC | U.S. West Coast |

# Executive Summary

## Introduction

### Background

In February 2008 the Port Authority of Guam (PAG) and its consultant, PB International, Inc. (PBI), completed the Master Plan Update 2007 Report. The original Port facilities were put in service in the late 1960s and had not undergone a major renovation program. Certain facilities, equipment and systems were in need of improvement and modernization to support the needs of Guam's current population base, industries and tourism. Additional improvements and capacities were needed on an accelerated basis to meet the imminent U.S. military buildup on Guam resulting from the relocation of U.S. Marine Corps forces from Okinawa to Guam starting in 2014. Port cargo volumes from the military buildup were projected to substantially increase the volume through the port in future years. The Master Plan identified a flexible port layout and program of improvements needed at PAG's commercial port facilities in order to meet these extraordinary demands. The capital improvement program was estimated to cost $195 million in 2008 dollars as shown below.

With the completion of the Master Plan, Guam government officials and the U.S. Department of Defense (DOD) were reassured that an improvement plan had been developed that would give PAG the flexibility and capacity to handle the short term military requirements and Guam's long-term port needs. The focus then turned to the question of how PAG, the Government of Guam (Gov Guam) and the Federal government could share in the responsibility for the port improvement costs. Consequently, PAG with funding assistance from the DOD Office of Economic Adjustment (OEA) requested that PBI undertake this Financial Feasibility Study.

### Study Purpose & Goals

The overarching purpose of the Financial Feasibility Study (FFS) is to assist the policy makers at PAG, Gov Guam, DOD and other Federal agencies in formulating a financing/funding strategy for the modernization of the port. The type and level of financial analysis performed was designed to guide the policy making process and was not intended to provide an investment grade bankable document. The report makes recommendations with respect to certain technical matters, financial scenarios, and potential management actions, but ultimately the preferred course of action is a policy matter to be decided upon by PAG, Gov Guam and others.

## Master Plan CIP Capital Requirements

The facilities, equipment and amenities that are required to implement the Port Modernization and Expansion program is described in the Master Plan Update 2007 Report. The estimate of capital costs by major line item as presented in the report is shown on Table E-1.

The $195 million capital cost estimate presented above was used in conjunction with a notional schedule for completion of the design, construction and delivery of the CIP to develop an estimate of the year-by-year cash flow requirements for the program. Based on the notional schedule and an estimated 4.8% cost escalation factor, the escalated cash flow needs for the Port Modernization and Expansion are summarized in Table E-2 below.

The cash flow in Table E-2 is based on the assumptions in one schedule delivery method and may vary depending on the actual implementation plan that PAG uses for design, construction and commissioning of the improvements.

**Table E-1 Port Modernization & Expansion Capital Cost Estimate ($2008)**

| ITEM DESCRIPTION | | Budget Estimate |
|---|---|---|
| Mobilization and Demobilization | | $ 6,640,000 |
| All Other Contract Work not stated below | | $ 2,180,000 |
| Demolition | | $ 7,510,000 |
| Berth F-5 to F-7 Modernization | | $ 34,290,000 |
| Buildings | | $ 7,950,000 |
| Terminal Paving | | $ 14,600,000 |
| Power, Lighting & Electrical | | $ 10,280,000 |
| Site Utilities | | $ 20,110,000 |
| Security | | $ 7,740,000 |
| Container Cranes | | $ 14,500,000 |
| Top-Picks & Spreaders | | $ 2,900,000 |
| Side-Picks | | $ 1,500,000 |
| Other Yard Equipment | | $ 3,700,000 |
| Terminal Operating System | | $ 2,500,000 |
| Gates | | $ 2,500,000 |
| | | $ - |
| CAPITAL COST ESTIMATE TOTAL | | $ 138,900,000 |
| Contingency | 25% | $ 34,900,000 |
| Engineering/Permits/CM | 15% | $ 21,200,000 |
| TOTAL in January 2008 US$ | | $ 195,000,000 |

**Table E-2 Capital Cost Estimate Cash Flow Estimate**

| Federal Fiscal Year | Escalated Cash Flow ($Millions) |
|---|---|
| 2009 | $12.6 |
| 2010 | $49.2 |
| 2011 | $96.9 |
| 2012 | $60.4 |

*Note: Assumes 4.8% annual cost escalation.*

## Port Funding in the United States

The U.S. Maritime Administration (MARAD) in conjunction with the American Association of Port Authorities (AAPA) has tracked past and potential future port expenditures on capital improvements for several years. As shown, in the table below, MARAD reports on six primary sources of capital for U.S. ports: port revenues, general obligation bonds (GO bonds), revenue bonds, loans, grants, and other sources.

**Table E-3 Sources of U.S. Port Funding for Capital Improvements (% of Total)**

| | *2006-10* |
|---|---|
| Port Revenues | 53.3% |
| G.O. Bonds | 17.7% |
| Revenue Bonds | 16.6% |
| Loans | 0.2% |
| Grants | 2.8% |
| Other | 9.5% |

*Source: MARAD*

# Major Sources of Financing for PAG

The major sources of readily available financing (borrowing) for the Port of Guam for its Capital Improvement Program (CIP) were found to be revenue bonds and USDA guaranteed loans.

### Revenue Bonds

The Port of Guam, with the assistance of the Guam Economic Development and Commerce Authority (GEDCA), may issue Revenue Bonds secured by a pledge of its future revenues to repay the bonds over time. Port Revenue Bonds are typically issued for a term of up to 30 years. As a governmental agency, the Port can issue bonds for most projects on a tax-exempt basis, meaning that investors who hold the bonds pay no federal income taxes on the interest they receive. As a result, the Port is able to pay lower interest rates than are paid on taxable bonds, which provides for significantly lower financing costs. The use of tax-exempt financing, however, subjects the Port to complex federal regulations regarding the management and use of the bond proceeds.

Revenue bonds as a major financing option have been examined at length, including discussions with GEDCA, Banc of America Securities LLC (BOFA), GEDCA's financial advisor and others.

It could be argued that it may be difficult to qualify PAG revenue bonds as investment grade with the rating agencies because of PAG's lack of any history in the bond market and other factors. However BOFA's initial review is cause to be optimistic that PAG revenue bonds for the project could be classified at the low end of the range of investment grade bonds.

### USDA Community Facilities Guaranteed Loan Program

The Community Facilities Guaranteed Loan Program provides a loan guarantee for essential community facilities, including port facilities. Under this program, the U.S. Department of Agriculture (USDA) guarantees up to 90% of loans by eligible lenders. According to USDA the largest guaranteed loan completed by USDA to date was for a $76 million project in Virginia. There is no statutory limit to funding, but there is a potential limit based upon available funds. In addition to the loan guarantee program, the USDA has a direct loan program, which has a limit of $5 million per project. The interest rate is negotiated between the lender and the applicant. Loan terms are for the estimated useful life of the facility or no more than 40 years.

The Port has already used the USDA loan option previously for much needed equipment replacement. It had obtained a commitment for $17.5 million in loans via USDA, composed of a $2 million direct loan and $12 million guaranteed loan through Citizens Security Bank (CSB) for purchasing two gantry cranes, and a $3.5 million guaranteed loan through CSB for purchasing other cargo handling equipment. The USDA has expressed interest in currently working with the Port of Guam to assess a more comprehensive funding package that addresses the Port's $195 million 2007 Master Plan Update CIP funding requirement. The amount of funds available for Guam is currently unclear.

# Major Sources of Funding for PAG

### Federal Grants & Appropriations

Federal grants and appropriations from a variety of Federal agencies may be obtained to assist in the development the Port of Guam. The Governor, his staff and PAG management have begun preliminary outreach efforts to identify and obtain Federal Funds for the Master Plan CIP improvements. Since completion of the Master Plan in February 2008, PAG and Gov Guam have tentatively identified or received a total of $6.8 Million towards the Master Plan CIP program. The status of funds expended before the Master Plan CIP effort and the amounts received or targeted since March 2008 is as follows.

**Table E-4 Master Plan CIP Amounts Expended, Allocated or Targeted to Date**

| FY 2008 | Amount | Source | Status |
|---|---|---|---|
| Master Plan Development | $ 466,000 | Port | Expended |
| Financial Feasibility | $ 300,000 | OEA | Expended |
| Community Outreach & Consensus Building | $ 350,000 | OEA | Ongoing |
| **FY 2009** | | | |
| Preliminary Engineering, Environmental & Planning | $ 2,000,000 | OIA | Allocated |
| | $ 2,300,000 | Port | Allocated |
| | $ 2,000,000 | EDA | Application |
| CP Scheduling & Implementation Plan | $ 500,000 | OEA | Application |

*Note: Only the amounts shown for FY 2009 are part of the Master Plan CIP budget.*

Congresswoman Madeleine Bordallo has introduced legislation (H.R. 6007) to create a Port Development Fund with a goal that the fund be established by the end of September 2008.

The Port of Guam has signed a Memorandum of Understanding (MOU) with MARAD to assist in the modernization of the facilities at the Port of Guam. MARAD's specific responsibilities with respect to funding under the MOU include:

- Coordinate with other Federal agencies that issue grants or receive Congressional appropriations and other funding that is identified for the PROJECT.
- Develop and execute all financial documents as required for the transfer to and administration by the Maritime Administration, of Federal and non-federal amounts received and released by the Government of Guam or the PAG for PROJECT activities.
- Obligate and disburse funding for the PROJECT including being responsible for all financial reporting requirements consistent with the contract and all funding compliance requirements related to or associated with the PROJECT.

MARAD will be reimbursed with a 3% fee on new Federal Appropriations and Grants that are identified and included in the funding basket for implementing the project. PAG and MARAD are awaiting congressional authorization before commencing comprehensive execution of the MARAD's responsibilities under the MOU. Any funds received for port development will be placed in the above referenced a Port Development Fund to facilitate port development. In addition, designation of the Port of Guam as a U.S. strategic port could further help with securing funding.

## Financial Analysis Model

Based on PBI financial modeling technology a detailed financial analysis model was prepared for PAG to assist in estimating the port's borrowing capacity and identifying its outside funding requirements for the $195 million Master Plan CIP program. The overall goal of the financial model is to simulate PAG's financial performance at a reasonable level of accuracy under existing conditions and project or estimate alternative future financial scenarios. This will better enable PAG managers and policy makers to evaluate policy options and decide on an optimal financing and funding strategy with confidence as to its feasibility and outcome.

### Key Features

The financial analysis model integrates a very broad range of factors and incorporates the ability to test alternatives based on a broad range of input variables affecting PAG's financial performance, and alternate financing and funding schemes. These include items such as, cargo volumes, labor manning,

crane productivity, grounded vs. chassis operations, tariff and non-tariff pricing escalation, special military surcharge rates, labor cost, non-labor cost and capital cost escalation factors, future maintenance and replacement capital requirements, coverage ratio required for borrowing and interest rate on borrowing.

The model includes a simulation of the critical variable costs associated with container and breakbulk cargo operations based on the volume per ship by carrier type, the number of cranes assigned to each ship by shift, estimated manning schedules for vessel, yard and gate operations, and existing and future crane productivity.

Revenues are based on actual tariff rates and detailed estimates of carrier volumes by container size, grounded vs. chassis, load vs. empty, inbound vs. outbound, local vs. transshipment, and breakbulk by cargo category.

The model produces key investment analysis and financing metrics relative to the Master Plan CIP including internal rate of return (IRR), net present value (NPV), estimated maximum bonding/borrowing capacity, and estimated annual bond/loan payments.

The model results were calibrated against PAG's actual FY 2007 audited financial results.

### Model Outputs

The financial model produces a complete statement of revenues and expenses (profit and loss) year by year through 2040 for PAG's cargo operations, traditional "landlord port" operations, and consolidated operations. The key bottom line measurements of operating/financial performance produced by the model are operating income, net income, and unencumbered cash flow.

## Financial Performance Scenarios

### Key Principles

Regardless of the specific future scenario under analysis or policy consideration by PAG, a few key principles of financial management are assumed to be followed and, as such, are incorporated into the financial modeling. These include maintaining the port to generally accepted industry standards, maintenance of a positive cash flow, control of costs through productivity improvements and keeping up with inflation.

### Key Assumptions

Based on these principles and other considerations the following key assumptions have been used in all the scenarios:

- The likely/median cargo volume forecast to 2030 is assumed.
- A schedule for full implementation, based on the currently official DOD buildup schedule is assumed.
- Future cost escalation rates are based on those used by Moody's Investors Service for a recent Guam Power Authority Bond issue. A weighted average 4.8% inflation rate is assumed through 2030 for non-labor expenses and maintenance/replacement capital costs.
- Labor costs are assumed to lag behind CPI and rise at 3.5% annually, based on the current civil service step increases used by PAG and the likelihood of a new salary scale, including Certified Technical Professional positions, after the planned compensation review is completed.
- The demand for labor will vary with variations in the demand for cargo throughput. It was assumed that the labor hours needed to handle the cargo will vary with these cargo volume fluctuations.
- Certain financing fees and costs are not included in the model, such as bond or loan financing fees or MARAD fees for management of Federal Funds etc.
- Crane production after implementation of the Master Plan CIP is assumed to increase by up to 43% from current levels, depending on the carrier group.

- Unfunded retirement costs are projected to continue through 2040 at the FY2007 level of $807,229 per year.
- COLA and supplemental annuity costs are projected to continue through 2040 at the estimated FY2008 level of $1,800,000 per year.

**General Findings**

In all of the scenarios, the following dynamics are evident regarding PAG's future operating finances:

- As a result of the DOD buildup, volumes are projected to increase dramatically from 2010 to 2016. Container volumes are projected to increase as much as 75% and breakbulk volumes are projected to increase as much as 125%. After the DOD construction buildup, container volumes will remain at least 50% higher compared with 2007.
- Consequently, revenues from cargo operations are projected to increase rapidly, especially during the DOD buildup. At the same time, because of the higher productivity and efficiencies created by the proposed new terminal, direct operating expenses for cargo operations are projected to increase at a slower rate
- The combined result is that unencumbered cash flow available for maintenance/replacement capital and Master Plan CIP bond/loan payments is expected to more than triple during the buildup without the benefit of any tariff increases and after cost escalations. With relatively modest tariff increases, cash flow could quintuple at the peak and triple in the out years.
- Notwithstanding the above there is still insufficient cargo to finance entire Master Plan CIP improvements purely from future cash flows.
- Of all the variables tested in the scenario analysis, it is clear that the feasibility of financing any significant portion of the Master Plan CIP is most sensitive to future tariff pricing policy. Without annual tariff increases at some level, a major borrowing is not likely feasible. In order to support a revenue bond issue, annual tariff increases are likely needed.

**Financial Scenario Analysis**

PBI initially prepared 20 preliminary financial scenarios to test the sensitivities of PAG's finances to a wide variety of future variables such as productivity levels, pricing strategy, staffing levels and financing terms so that PAG managers and policy makers could gain a qualitative and quantitative sense of potential future policy options. The preliminary analysis provided managers and policy makers with a "menu" of potential management actions, which they could build into policy options for broader discussion.

After presentation of the preliminary analysis by PBI and review by PAG, the PAG board selected five scenarios for further refinement and analysis, including:

A. Base Case (Minimum Cash Flow)
B. Base Case + Military Surcharge
C. Base Case + Military Surcharge & Staffing Reduction
D. Base Case + PMC for Maintenance
E. PMC for Cargo Operations

The refined scenarios are each discussed below and the results of the scenarios are summarized in more detail in Table E-5.

**Financing Assumptions**

To develop the financing assumptions used to estimate PAG's borrowing capacity under the alternate scenarios, PBI worked with GEDCA and its financial advisor (Bank of America), other bond underwriters, the USDA. Based on input from these parties, the following financing terms are assumed:

- 20-year borrowing to 2030
- 5.5% interest rate
- Assumed PAG policy level 1.6 coverage ratio

It should be noted that the study model is structured to provide only an estimate of the net proceeds of the bond/loan available to the Master Plan CIP Project under the alternate scenarios. It does not break out detailed financing related line items such as reserve fund, capitalized interest fund and closing costs. Typical estimates of such financing costs and the full par value for the Base Case Scenario A for a maximum borrowing capacity with a coverage ratio of 1.25 are provided in the BOFA pro-forma analysis included in Appendix 6 as a benchmark.

**Scenario A – Base Case**

Issuing revenue bonds or securing a USDA guaranteed loan will require that PAG maintain sufficient cash flow coverage or reserves over and above its debt service payments such that the bondholders or lenders are assured PAG can make its bond/loan payments while also addressing unforeseen financial requirements. This will require that PAG review its finances annually and make adjustments to costs or pricing to ensure that these coverage or reserve obligations are met. In some years revenues will need to be increased and tariff adjustments will be needed. These tariff adjustments can be designed and applied so as to minimize the impact on price sensitive cargoes and the economy of Guam. In other years price increases may not be needed to maintain coverage or reserve requirements. In any event, it is anticipated that the bondholders and lenders will require that PAG have the authority to make such pricing adjustments at an operational level independent of the legislative process.

The Base Case identifies the minimum level of average annual tariff rate escalations that would likely be required through 2030 to maintain a positive cash flow available for debt service (cash flow after maintenance/replacement capital expenditures). The financial modeling found that across-the-board tariff adjustments of approximately 2.3% annually (1.25% on transshipments) would likely be required to maintain a positive cash flow available for debt service. The required coverage or reserve requirement was then applied to this cash flow and the resulting borrowing capacity was calculated based on revenue bonds and a USDA guaranteed loan.

To put the Base Case tariff changes at the Port of Guam in perspective, it is useful to note that the PAG tariffs account for less than 10% of the total transportation cost for a typical 40-foot container from California to Guam.

When the cumulative 22-year cost increase associated with 2.3% annual tariff escalation is spread over 1,000s of consumer items in a container, the added cost per unit in 2030 will amount to a few pennies or a fraction of a penny per item in future 2030 dollars. In today's dollars, the future added cost would be even less as shown below:

| | Future 2030 Dollars | Today's Dollars |
|---|---|---|
| 12-oz canned beverage | 0.7¢ | 0.3¢ |
| 12-oz. can of Spam | 0.8¢ | 0.3¢ |
| 1 head of lettuce | 1.5¢ | 0.5¢ |
| 20-lb. bag of rice | 16.1¢ | 5.7¢ |
| 8-foot two-by-four | 10.3¢ | 3.7¢ |

The Base Case also includes crane productivity rates that are 6% to 43% higher than at present, based on the new cranes, terminal equipment and computerized operating system included in the Master Plan. The Base Case also assumes existing PAG staffing levels.

**Scenario B – Base Case + Military Surcharge**

The Military Surcharge Scenario assumes an approximately 100% wharfage surcharge on all DOD construction and on-going military base traffic to 2030 (including existing DOD cargo) – $100/container and $4.00/revenue ton on breakbulk cargo – in addition to the tariff rate escalation factors in the Base

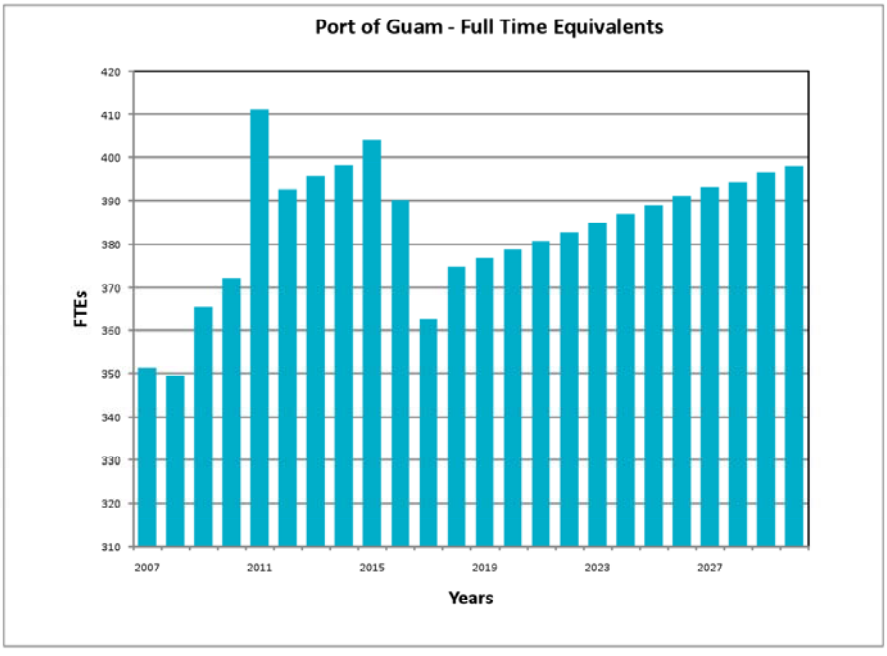
Case above. Because of the complexities in identifying all military cargo, however, this scenario assumes that only 33% of the forecasted military cargo is assessed with the surcharge. Note that this surcharge is not a substitute for the Federal Funding and Grants discussed for this and other scenarios but is a surcharge applicable to military cargo directly and paid for by the military. The scenario results in significantly higher cash flows available for debt service than in the Base Case alone.

**Scenario C – Base Case + Military Surcharge & Staffing Efficiency Improvements**

This scenario tests the results of a combination of management actions in pricing and staffing efficiency. It assumes the 2.3% minimum tariff escalation, the approximately 100% DOD wharfage surcharge (on 33% of the military cargo) and 10% staffing reductions or reassignments in equipment maintenance, facility maintenance and administration in 2012. The potential feasibility of staffing reassignments (16 positions) is based on the following rationale:

- With all new equipment after completion of the Master Plan CIP program, the equipment maintenance function will focus more on preventive maintenance rather than repairs and equipment maintenance requirements may be reduced. While overall equipment maintenance staffing will increase with more equipment, increased cargo volume and increased equipment use, the scenario includes a one-time reduction in equipment maintenance staffing (approximately 5 positions).
- Likewise, with newly built and refurbished facilities, it is assumed that facility maintenance can focus more on preventive maintenance and a one-time reduction in facility maintenance staffing may be feasible (approximately 3 positions).
- With a new integrated Terminal Operating System after completion of the Master Plan CIP, administrative support for data entry, data analysis, accounting, billing, and other administrative functions will be reduced. Hence, the scenario includes a one-time reduction in administrative staffing (approximately 8 positions).

The above one-time staffing reductions or reassignments would take place in an overall context of rising employment at the port, as shown in the chart below. The net result is expected to be increased employment with emphasis on more need for operating personnel.



### Scenario D – Base Case + PMC for Maintenance

This scenario is modeled on the current request for proposals (RFP) that PAG has drafted for a PMC to perform maintenance and related procurement functions. Under this scenario, the PMC would manage all equipment maintenance, facility maintenance and procurement beginning in 2009 and have the option to acquire and lease to PAG certain capital improvement items.

It is difficult to predict how bidders would structure their proposed operations under this RFP; however, for purposes of this analysis, it was assumed that the PMC would reduce or reassign facility and equipment maintenance staffing by about 12 positions and procurement staffing by 2 positions as a result of increased efficiencies. The PMC costs paid by PAG include a $500,000/year management fee/overhead cost to account for the PMC's on-site personnel, allocated corporate overhead and profit.

Under the PMC maintenance RFP, the PMC would have the option to participate in capital purchases for PAG, but it is not obligated to do so. For purposes of this scenario, it was assumed that the PMC would take a very aggressive stance with respect to capital participation by acquiring and leasing to PAG all terminal equipment excluding cranes for the Master Plan CIP ($8.1 million, 2008 dollars) and all downstream equipment replacements ($19.6 million, 2008 dollars).

The same pricing assumptions as in the Base Case are assumed.

### Scenario E – PMC for Cargo Operations

This PMC scenario assumes that a private terminal operator performs all cargo operations, crane and equipment maintenance, and terminal security beginning in 2010. Under this scenario, PAG assumes a more traditional landlord port role, including facility maintenance, management of leased properties and marinas, harbor master functions, and port police. It results in about 25 less staff positions than those shown for Scenario A, and also assumes that the private operator achieves crane productivity levels that are 2 containers per hour higher for all carriers. The PMC costs include a $500,000/year management fee/overhead cost to account for the PMC's on-site personnel and allocated corporate overhead.

From a pricing standpoint, this scenario assumes that the PMC controls all throughput and operational pricing and PAG controls wharfage and dockage pricing. Escalation at 2.3% annually on wharfage and dockage by PAG is assumed as in the Base Case, and 2.0% escalation of throughput and operational rates by the PMC is assumed.

Financially, the scenario assumes that the PMC provides $25.1 million (2008 dollars) towards the Master Plan CIP capital requirement for the cranes, terminal equipment and terminal operating system plus the downstream replacement capital for the cranes and equipment.

As payment to PAG, the PMC is able to pass all wharfage and dockage revenues to PAG and pay PAG a license fee. Wharfage and dockage revenues to PAG are estimated to start at $6 million/year, rising to $13 million in 2030 with volume increases and tariff escalations. License fee revenues to PAG are estimated to be $4-$6 million/year in the first five years, $9-$10 million/year during peak DOD volumes, and $5-$10 million/year in the out years.

It was assumed that employees, except for PMC corporate employees would continue to work with government rates and benefits but work at the direction of the PMC.

### PAG Borrowing Capacity by Scenario

PAG's estimated borrowing capacity under the five refined financial performance scenarios is summarized in the table below along with the estimated capital contribution by a PMC under Scenarios D and E. Under these scenarios, the combination of PAG's borrowing capacity and the PMC's capital contribution (where applicable) ranges from a low of $35 million under Scenario A (Base Case) with a more conservative policy on debt service coverage of 2.0 to a high of $68 million under Scenario C (Base Case + Military Surcharge & Staffing Reduction) with the assumed PAG policy of 1.6.

**Table E-5 Summary of PAG Borrowing Capacity & PMC Capital Contribution**

| DEBT SERVICE COVERAGE POLICY & SCENARIO | PAG ESTIMATED BORROWING CAPACITY* | PMC ESTIMATED CAPITAL CONTRIBUTION | TOTAL PAG + PMC |
|---|---|---|---|
| **ASSUMED PAG POLICY (1.6 COVERAGE)** | | | |
| A. Base Case | $44,350,726 | n/a | $44,350,726 |
| B. Base Case + Military Surcharge | $60,172,504 | n/a | $60,172,504 |
| C. Base Case + Military Surcharge & Staffing Reduction | $68,146,446 | n/a | $68,146,446 |
| D. Base Case + PMC for Maintenance | $42,851,275 | $8,100,000 | $50,951,275 |
| E. PMC for Cargo Operation | $30,378,296 | $25,100,000 | $55,478,296 |
| **MORE CONSERVATIVE POLICY (2.0 COVERAGE)** | | | |
| A. Base Case | $35,480,581 | n/a | $35,480,581 |
| B. Base Case + Military Surcharge | $48,138,003 | n/a | $48,138,003 |
| C. Base Case + Military Surcharge & Staffing Reduction | $54,517,157 | n/a | $54,517,157 |
| D. Base Case + PMC for Maintenance | $34,281,020 | $8,100,000 | $42,381,020 |
| E. PMC for Cargo Operation | $24,302,637 | $25,100,000 | $49,402,637 |

*Proceeds available for construction. Does not include reserve fund, capitalized interest fund and closing costs.

### Feasibility of Scenarios

All of the refined scenarios studied represent feasible alternatives for PAG to raise capital for the Master Plan CIP program; however, some have a higher probability of achieving the estimated results than others and each involves a different type of risk. Scenarios D and E are dependent on the PAG finding a suitable PMC Contractor.

- The Base Case (Scenario A) is the most conservative and involves actions that are most within PAG's control. Tariff pricing must be reviewed and adjusted annually or periodically to ensure that coverage or reserve requirements are maintained. While these actions should be reviewed by others, most likely including an industry advisory group, they should be free from direct customer and governmental influence.
- The military surcharge options (Scenarios B&C) further require that military cargo be identified as a part of routine terminal operations so that it can be assessed the appropriate surcharge. They also require that the military comply with the tariff. For these reasons, the military surcharge revenue included in these scenarios might be considered less certain than the regular tariff revenues, although this uncertainty could be mitigated through early negotiation with the military.
- The PMC maintenance option (Scenario D) can bring benefits to PAG in terms of maintenance efficiencies and streamlined procurement, and results in a net increase in capital contributed for the Master Plan CIP compared with the Base Case if the PMC opts to aggressively participate in capital acquisitions. Without financial participation in capital purchases by the PMC, this option of the Master Plan CIP has little impact on PAG's borrowing capacity.
- The PMC cases (Scenarios D&E) are subject to successful bidding and negotiation of contract terms with private companies. Once this negotiating process is concluded, the uncertainties associated with the contract terms in these scenarios will be reduced; however, uncertainties will remain and achieving the estimated financial results will depend on the performance of others.
- Interestingly, the scenario that potentially produces the greatest borrowing capacity for PAG (Scenario C) is the one involving the most assertive set of management actions by PAG, without involving a PMC. Scenario C suggests that PAG could achieve its best financial results, if it could implement Base Case tariff increases, a military surcharge, improve operating efficiencies and reduce or reassign staffing where warranted by the new efficiencies of a modernized port.

### Key Scenario Issues

The key issues associated with the financial performance scenarios include:

- Borrowing risk – All of the scenarios assume that PAG takes on a long-term borrowing that will require diligent management over a 20-year period. PAG has always assumed the operating and market risks associated with productivity, operating costs and pricing, but the margin for error will be reduced and the consequences of lower-than-expected results will increase when a long-term borrowing is included.
- Tariff pricing – The analysis finds that future financial performance for PAG is extremely sensitive to PAG's tariff pricing actions. Labor costs and non-labor expenses will be subject to continued inflation. Productivity improvements will help control costs but it is evident that PAG's tariff pricing must be adjusted over time. The projected minimum need for tariff adjustment is less than half of the projected rate of inflation in Guam and compared with prices for retail goods escalation of port tariffs is minor.
- Military surcharge – Many issues surround the concept of assessing a special military surcharge to help finance improvements. Identifying military cargoes and assessing surcharges as a part of normal port operations will be challenging and the military's willingness to assist in or comply with a surcharge has not been established. Detailed discussions with the military will be needed in conjunction with refining a military surcharge strategy.
- Productivity and variable workforce – New cranes, new terminal equipment, semi-automated gates and a new computerized terminal operating system will result in higher vessel productivity and lower operating costs per container. The financial analysis assumes productivity increases of up to 43% in terms of containers per hour, which should be readily achievable based on industry standards. The analysis also assumes a variable workforce level for vessel operations as volumes peak during the DOD buildup and then decline. This will require that PAG use its authority to hire temporary workers and effectively manage them to meet the variable demand levels expected on a year-to-year and day-to-day basis in the future.
- Staffing – The efficiencies created by new facilities, new equipment and a terminal operating system will also create the potential to manage staffing levels in the maintenance and administrative areas. Some scenarios include potential staffing adjustments to address this. Any adjustment of staffing levels will take place in the context of increased overall employment at the port and attrition within the workforce as older workers retire. Nonetheless, this issue will require careful management.
- PMC approach – Two significantly different approaches are included in the analysis for further increasing efficiency and attracting private capital using the PMC concept. One approach could attract a significant capital contribution by leveraging cargo operations and much of PAG's revenue stream under the management of a PMC operator; the other allows PAG to maintain operating control but has limited benefits in attracting private capital by outsourcing maintenance and procurement.

## Federal Funding Considerations

### Dependency of DOD Capital Program on Port

In order to have a sense of perspective on what is at stake and the key role that the Port will have to undertake in making the proposed military relocation program a success, it is beneficial to review the capital expenditures that the military has budgeted for its bases in Guam between 2007 and 2015. The budget for all Army, Navy, medical, Air Force and Marine relocation expenses and facilities is budgeted to be about $12.5 billion. Of this only about $630 million is budgeted for Fiscal Years 2007 and 2008.

**Table E-6 DOD Expenditures for Base Relocation to Guam (2007-2015)**

| DOD Department | Total Expenditure ($Millions) |
|---|---|
| Army | $150.0 |
| Navy | $578.2 |
| Medical | $118.8 |
| Air Force | $1,591.2 |
| Marines | $10,270.0 |
| **Total** | **$ 12,562.1** |

*Source: US DOD*

The Port Modernization cost of $195 million ($2008) was not included in the DOD budget for relocation. While it is financially an insignificant fraction of the above expenditures (1% to 1½%), it is a critical infrastructure improvement that must be in place before the construction work for the DOD or the base relocation program can begin. The commercial port, was designed and put into service in 1969, and has not undergone any significant modernization since that time. In contrast typical ports on the west coast have gone through two or more cycles of major upgrades within the same period. The Master Plan Update 2007 analyses found that without the port modernization and expansion it would not be possible to bring in the cargo needed for the military buildup.

### No Other Alternatives for Moving DOD Cargo

The Port of Guam is the only commercial cargo port in the territory of Guam. Virtually all seaborne commercial container and breakbulk cargo moves through the port. While no formal studies were undertaken to build a new port for handling the DOD cargo, based on other green-field projects of this nature it is anticipated that the cost of a new port for this purpose will be multiple times the cost of modernizing and expanding the existing port. It is also anticipated that the time needed to perform field investigations and environmental studies and obtain U.S. Army Corps of Engineers Section 10 permits will be much more extended than if the existing Port was modernized and expanded.

### Limited Opportunities for Local Funding & Financing

It is clear that PAG revenue bonds or a USDA guaranteed loan can provide at least a portion of the Master Plan CIP Capital requirements but that the major source of Master Plan CIP capital should be obtained from grants and appropriations. The basis for this is inherent in the findings of the financial analysis and may be summarized as follows:

- Lack of Guam Government Resources & Bonding Capacity - The Government of Guam does not have the resources or capacity to consider general obligation bonds or other forms of similar financing for Port improvements, given the existing local requirements for infrastructure improvements.
- Insufficient Port Resources - The Port does not have sufficient cash or assets on its balance sheet to fund the CIP work using its own resources. Its current cash balance of some $14 to $16 million is considered as minimum working capital for running the port operations.
- Insufficient Future Cash Flow - Even with the increased cargo flow from the DOD buildup and reasonable increases to tariffs, the Port does not generate sufficient cash flow for bond/loan payments in order to finance more than a fraction of the immediate CIP cash requirements of $195 million.
- Maintenance Must Be Funded First – The financial analysis included projections of all the identifiable capital needs faced by PAG over the 20-year planning horizon, including maintenance and replacement capital. Before cash flow from operations can be made available for borrowing, it is important that PAG first fund the on-going maintenance of the port from its operational cash flows.

- Non-Cargo Needs Also Must Be Funded - The Master Plan also identified the fact that PAG will have to perform maintenance related capital improvements in the future on non-cargo related facilities such as Berths F-2 and F-3. These facilities are contiguous and adjacent to the Cargo Terminal and are currently serving the fishing and cruise industries. The costs of such future improvements have been included in the financial analysis in order to obtain a holistic assessment of PAG's ability to borrow funds.
- Limited PAG Borrowing Capacity – Using an assumed PAG policy with a coverage ratio of 1.6, results in a maximum borrowing capacity in the $35 to $68 million range depending on the financial scenario.
- Borrowing to Capacity Would Expose PAG to Excessive Business Risk - Limited as PAG's borrowing capacity is in relation to the $195 million Master Plan CIP budget, it may not be in its best interests for PAG to borrow to its full capacity due to the inherent business risks and lost opportunity associated with such a position. The types of business risk PAG would face over a 20-year financing term include:
  - Lower than forecasted cargo volume
  - Unanticipated base population changes
  - Lower than expected productivity increases
  - Higher than anticipated labor costs
  - Local or customer resistance to tariff adjustments
  - Uninsured cost or downtime from natural disasters
  - Lack of resources for future opportunities
- Insufficient Cargo for Private Concession - As outlined in the report we do not believe that there is sufficient cargo over a comprehensive 20- or 30-year term to help attract a BOT or other Concession partner for implementing the project. There have been some tentative inquiries regarding such private financing options. The study results will help PAG investigate these inquiries more objectively.

## No DOD Buildup Scenario

In order to assess the impact of the DOD buildup on PAG's port development and capital expenditure requirements, a No DOD Buildup scenario was analyzed and compared to the Master Plan CIP scenario. The No DOD Buildup scenario assumes that no U.S. Marine base relocation and DOD buildup occur. Consequently, the cargo forecast for PAG would be much lower, particularly for the next eight years, and a deferred/reduced capital improvement program could be undertaken by PAG.

### No DOD CIP Program

Some of the main differences between the Master Plan CIP program and the deferred/reduced No DOD Buildup CIP program are:

- Facility repairs and equipment repair/replacement would continue at a higher rate in the form of annual maintenance/replacement capital expenditures
- Berth F7 would not be needed
- One refurbished crane would be acquired in 2009 instead of three under the Master Plan CIP
- All terminal equipment purchases would be handled as a part of the maintenance/replacement capital program
- An approximately $112 million CIP program would be undertaken in 2017 to 2020, including refurbishment of Berths F2 and F3, replacement of the Subic crane, and a reduced scope of Master Plan CIP projects (F-4, F-5, F-6 and associated facilities)

### Cost Differential between No DOD Buildup Scenario & Master Plan CIP

The table below compares the present value of all capital outlays required from 2009 to 2030 under the Master Plan CIP scenario and the No DOD Buildup scenario. The comparison includes both the CIP projects and the required maintenance/replacement capital expenditures over the 22-year period. The present value of these capital outlays is used to account for the significant timing differences between the two scenarios by expressing the value of each in today's dollars.

**Table E-7 Comparison of Master Plan CIP & No DOD Buildup Scenarios**

| PRESENT VALUE OF CIP & MAINTENANCE REPLACEMENT CAPITAL OUTLAYS 2009-2030 | | |
|---|---|---|
| **MASTER PLAN CIP** | **NO DOD BUILDUP** | **DIFFERENCE ATTRIBUTABLE TO DOD BUILDUP** |
| $266 million | $126 million | $140 million |

The present value of capital outlays under the Master Plan CIP scenario is estimated to be $266 million compared with $126 million under the No DOD scenario, with a difference of $140 million. The cost differential between these two cases is important as a measure of the impact of the DOD buildup on PAG's capital program over the next 22 years. In the absence of the DOD buildup, PAG would have to spend $140 million less in today's dollars on capital programs and maintenance/replacement capital than is the case under the DOD buildup which necessitates the Master Plan CIP.

## Contribution Approach for Assessing Extent of Funding

At the outset the analyses made it clear that the capital needed to modernize and expand the port to handle the DOD Base relocation generated cargo cannot be recovered by ordinary port tariffs only. The current throughput tariffs in general are comparable to competing ports such as Saipan and Honolulu. Thus solely increasing tariffs to pay for the port expansion does not seem to be a reasonable approach since these additional tariffs will be paid also by the people of Guam and the surrounding region in order to pay for the port expansion to handle DOD driven cargo.

This contribution approach to quantify the impact of the DOD Buildup on the Port in present value terms was to estimate the resources that would be needed to accommodate the DOD buildup compared to the status quo. The resources that need to be committed to make the base relocation successful may be categorized as follows:

- Net Program Capital Needs for 20 Years ("With DOD Buildup" less "Without DOD Buildup")
- Waterfront Land Assets
- Existing Port Facility Assets
- PAG Working Capital

Without the commitment of this existing PAG asset base to the DOD Buildup, the DOD program could not succeed. Assigning 100% of these assets (with facilities at book value) would result in a $51 million value committed to the DOD. It could be argued that this overstates PAG's contribution to the DOD because local commercial cargo would simultaneously benefit from the Port's facilities; on the other hand, it could also be noted that this is based on the depreciated book value of Port assets, which considerably understates their functional value to DOD.

Based on this analysis, the total value of capital improvements and PAG assets contributed to the DOD buildup is estimated to be $191 million, compared with the $195 million Master Plan CIP Capital requirement. If only 50% of the existing PAG asset base is considered, the value of capital improvements and PAG assets contributed to the DOD Buildup is estimated to be $166 million.

## Conclusions & Recommendations

The Consultants offer the following conclusions and recommendations:

- Annual Tariff Adjustments – To the extent that productivity improvements and cost controls cannot keep up with inflation, it is inevitable that periodic tariff increases will be needed to maintain positive financial performance. Again, industry standard practice is to review costs, revenues and pricing on an annual or at least five-year basis and implement tariff increases when and where appropriate.
- Authority to Adjust Tariffs – It is important that PAG be provided a mechanism to make continuing tariff adjustments on an annual basis to keep up with increasing costs without the need to have these increases approved by the Legislature and Governor. Most ports in the U.S. delegate the authority to increase tariffs to their Boards or Commission. Two models suggested by stakeholders for PAG were (i) a PUC type arrangement similar to that followed by GPA and (ii) the Airport model for increasing rates at the board level.
- Coverage Ratio Policy – It is important that PAG establish a coverage ratio policy consistent with the type of tariff setting authority provided to PAG. As a point of reference we understand that the GPA which has a PUC type tariff setting arrangement uses a ratio of 1.75 while the Airport with board level authority uses 1.6. These should be confirmed.
- Maximize Level of Federal Grants & Appropriations - Based upon the analysis PAG's future capital requirements with and without the DOD buildup, an absolute minimum Federal contribution of at least $140 million (in 2008 dollars) is indicated. Based on the analysis of the risks PAG would need to assume, the potential financial return to PAG, and allowing for future financial needs, it may not be in its best interests for PAG to borrow to its maximum capacity to support the DOD buildup. Therefore the analysis points strongly to increasing this minimum amount significantly based on PAG contributions and risks that it would be taking. These considerations point to a Federal contribution in the range of $140 to $180 million ($2008). This would leave a range of $15 to $55 million ($2008) that PAG would have to raise in the form of bonds or loans.
- Pursue Revenue Bonds and USDA Guaranteed Loans Simultaneously – The current information seems to suggest pursuit of USDA guaranteed loan program options as an alternative to revenue bonds due to fewer restrictions and lower closing costs. However it is recommended that both the revenue bond option and the USDA loan option be developed in parallel until the final financial framework is clearly identified and adopted.
- Mitigate Borrowing Risk – All of the scenarios assume that PAG takes on a long-term borrowing that will require diligent management with systems in place for maintaining bottom line performance over a 20-year period. Mitigate risk by minimizing the amount borrowed and seek a front end loaded repayment program that can repay debt during the early years when DOD cargo will be at a maximum.
- Productivity and Variable Workforce Levels – New cranes, new terminal equipment and a new computerized terminal operating system will result in higher vessel productivity and lower operating costs per container. PAG must use its authority to vary the workforce to address fluctuating cargo volumes. This must include the ability to hire temporary workers and effectively manage them to meet the variable demand levels expected on a year-to-year and day-to-day basis in the future.
- Military Surcharge – Seek to include a military surcharge component, if only to help mitigate local public reaction to future tariff escalations. It also signals that a minor portion of the cost of Master Plan CIP is paid directly by the DOD using funds allocated for the cargo that is a driver for port expansion. This should be based on discussions with the local representatives of the DOD. Note that all applicable military cargo cannot be identified and thus a prudent capture ratio should be considered in the final financial plan based on these discussions. We recommend that PAG confirm

from its legal counsel that there are no Federal or Local legal impediments to establishment of such a surcharge that applies only to DOD cargo but not other shippers.

- PMC Maintenance Scenario – If a PMC Maintenance type of structure is pursued, ensure that the contract is written in a fashion that does not preclude PAG flexibility for other forms of PMC Contracts in the future with appropriate legislative support.
- No Revenue Sharing Assumption - To the extent that any local laws require the transfer of a portion of PAG revenue to the Government's General Fund it may impact PAG's ability to establish bond financing for the modernization program. If necessary, this issue would have to be legally analyzed in detail and addressed legislatively at the time of bond financing. The study model did not include any allowance for the transfer of a portion of the revenue to the Government of Guam's General Fund.

## Immediate Next Steps

Based on the PAG financing and Federal funding requirements recommended above, the Consultant recommends that the following actions be taken to further refine and begin implementation of the financial framework:

- Select a Preferred Alternative – Based on the refined scenarios developed in the Financial Feasibility Study, the PAG board, Gov Guam and other key policy makers need to decide on a specific financing and funding strategy. In doing so, they need to reaffirm policy requirements of the strategy (e.g., the need for independent tariff setting authority) and make an initial policy decision on a specific loan amount or narrow range.
- Engage Lenders & Guarantors – Having settled on a loan amount, PAG should then engage the key lenders and guarantors in refining the financing options, identifying key terms, working on initial aspects of the financing structure and estimating financing costs. This would include working in parallel with GEDCA and BOFA regarding revenue bonds and the USDA regarding a guaranteed bank loan. In the case of USDA, a flexible RFP process/structure needs to be developed enabling PAG to select a potential lender while adjusting terms as needed as the project scope, schedule and funding are refined over time.
- Engage Key DOD Agencies – Given the key role of the DOD target, PAG and Gov Guam should also engage all the key DOD agencies as appropriate to negotiate funding targets and the military contribution, including any grants, appropriations and military cargo surcharge.
- Establish Federal Grant/Appropriation Strategy – PAG and Gov Guam should also develop and implement a specific Federal grant/appropriation strategy including identifying target agencies, dollar amounts, programs and timing; developing advocacy materials; and beginning Federal outreach.
- Develop Detailed Implementation Plan – Development of a detailed implementation plan for the Master Plan CIP program is critical at this stage. Such a plan should identify all of the key tasks, timing issues, linkages, milestones and critical path, including all planning, engineering permitting, financing and legal activities required to execute the program.
- Update Financial Modeling – Finally, the financial analyses should be updated at key milestones based on changes and refinements to the program resulting from the steps above.

# Section 1 Introduction

## 1.1 Background

In February 2008 the Port Authority of Guam (PAG) and its consultant, PB International, Inc. (PB), completed the Master Plan Update 2007 Report. The original Port facilities were put in service in the late 1960s and had not undergone a major renovation program. Certain facilities, equipment and systems were in need of improvement and modernization to support the needs of Guam's current population base, industries and tourism. Additional improvements and capacities were needed on an accelerated basis to meet the imminent U.S. military buildup on Guam resulting from the relocation of U.S. Marine Corps forces from Okinawa to Guam starting in 2014. Port cargo volumes from the military buildup were projected to substantially increase the volume through the port in future years. The Master Plan identified a flexible port layout and program of improvements needed at PAG's commercial port facilities in order to meet these extraordinary demands. The capital improvement program was estimated to cost $195 million in 2008 dollars.

With the completion of the Master Plan, Guam government officials and the U.S. Department of Defense (DOD) were reassured that an improvement plan had been developed that would give PAG the flexibility and capacity to handle the short term military requirements while minimizing any overbuilding with respect to Guam's long-term port needs. The focus then turned to the question of how PAG, the Government of Guam (Gov Guam) and the Federal government could pay for the $195 million improvement cost. Consequently, PAG with funding assistance from the DOD Office of Economic Adjustment requested that PBI undertake this Financial Feasibility Study.

## 1.2 Study Purpose & Goals

The overarching purpose of the Financial Feasibility Study (FFS) is to assist the policy makers at PAG, Gov Guam, DOD and other Federal agencies in formulating a financing/funding strategy for the modernization of the port. The type and level of financial analysis performed was designed to guide the policy making process and was not intended to provide an investment grade bankable document.

More specifically, the purpose is to provide PAG, Gov Guam and to a lesser extent the Federal agencies with a tool with which they can test alternative courses of action and arrive at policy decisions regarding financing and funding of the port modernization. PBI will make recommendations with respect to certain technical matters, financial scenarios, and potential management actions, but ultimately the preferred course of action is a policy matter to be decided upon by PAG, Gov Guam and others.

In this regard, the FFS was undertaken with the following goals:

- Develop a detailed analysis and decision-making framework that integrates the Master Plan capital expenditure (CAPEX) requirements for the preferred alternative selected by PAG, PAG's operating revenues, expenses and maintenance finances, as well as potential financing methods and funding sources to pay for the CAPEX program.
- Address CAPEX programming and demand considerations for the 20-year time frame required in the Master Plan.
- Integrate alternative port operation and CAPEX programming concepts in order to evaluate scenarios and tactical considerations during negotiations on funding and financing.
- Identify appropriate expansion requirements that can reasonably be attributed to the military base relocation, as opposed to resources necessary to address trend-line cargo and service demands for Guam's existing domestic and military needs only.
- Identify price elastic and inelastic cargo types for pricing and revenue maximization considerations. For example transshipment cargo has historically been very price elastic.

- Assist the Port in establishing tariffs consistent with financial plan considerations.
- Help PAG identify its capacity to finance improvements through borrowing in the revenue bond market or from other private or government lending sources.
- Help Gov Guam and PAG surface the need, justify the requirement, and obtain support for financial assistance from the Federal government.
- Help Gov Guam and PAG identify and negotiate backing from potential financial institutions.
- Provide an independent, objective and analytical assessment for use by Gov Guam and PAG with third parties such as the Federal government in order to implement a funding and financing plan.

## 1.3 Study Scope & Approach

The study scope involved eight tasks including:

1. Start-up, data gathering & analysis
2. Guam Trip No. 1 & interviews
3. Financial model development
4. Financing & funding strategies
5. Financial scenario analysis
6. Guam Trip No. 2, presentation & review
7. Financial analysis refinement
8. Report preparation

The key feature of the study approach was the development of a financial model that simulates PAG's financial performance under existing conditions and projects or estimates alternative future financial scenarios based on optional policy considerations. The Excel workbook model integrates a very broad range of factors affecting PAG's existing and future financial performance, including market, operating, pricing, management and policy issues. Specifically, it incorporates the flexibility to test alternatives based on a broad range of input variables affecting PAG's financial performance, and alternate financing and funding schemes, including:

- Cargo volumes
- Labor manning
- Crane productivity
- Grounded vs. chassis operations
- Tariff and non-tariff pricing changes
- Special military cargo surcharge rates
- Labor cost, non-labor cost and capital cost escalation factors
- Future maintenance & replacement capital requirements
- Coverage ratio required for borrowing
- Interest rate on borrowing

PBI researched and evaluated government programs, which could be tapped, to help fund the $195 million port modernization program. Since the development of the scope of work, PAG and the U.S. Maritime Administration (MARAD) entered into a Memorandum of Understanding (MOU) under which MARAD agreed to take on the role of identifying and administering Federal grant monies for the project. A variety of Federal grant programs were evaluated in the study, as was the key role of MARAD.

Initially, PBI prepared some 20 alternative financial scenarios for review, by PAG and other stakeholders, addressing alternative pricing scenarios, productivity scenarios, staffing scenarios, financing scenarios and Performance Management Contract (PMC) scenarios. These scenarios estimated PAG's borrowing capacity under alternative conditions. After presentation by PBI and review by PAG, the PAG board selected five scenarios for further refinement and analysis the results of which are presented in this report.

## 1.4 Report Organization

This report is organized into the following major chapters:

1. Introduction
2. PAG Financial History
3. Financial Model Framework & Design
4. Financing & Funding Options[1]
5. Financial Performance Scenarios
6. Financing Framework Considerations
7. Conclusions & Recommendations

Chapters 2 through 4 focus on the research, technical information and analytical inputs that feed the Financial Feasibility Study while Chapters 5 through 7 focuses on the study's findings, strategies and recommendations.

[1] *As used in this analysis, "financing" refers to various borrowing methods for port infrastructure development that require repayment and "funding" refers to various grant or other sources that do not require repayment.*

# Section 2 Port Financial History

Section 2 briefly addresses the financial history and background of PAG in order to establish a base line of information regarding past financial performance at the port.

## 2.1 PAG Financial History

The recent financial history of PAG is summarized in Tables 2.1-1 and 2.1-2, for the fiscal years 2003-2007 and 1998-2000, respectively. As these data show, PAG's operating revenues have been relatively steady over the past five years, ranging from a low of $25.3 million in 2006 to a high of $28.9 million in 2007. Net income has ranged between a $368,000 loss in 2005 and a $1.9 million profit in 2004. Likewise cash flow has ranged between $2.1 and $4.6 million. Fiscal year 2007 performance was generally at the high end of these ranges.

In 1999 and 2000, PAG's financial performance was very poor, declining dramatically from the 1998 level. Revenues declined from $27.4 million to $18.3 million, net income dropped from a $3.4 million profit to a $7.2 million loss, and cash flow declined from a $6.4 million positive cash flow to a $3.6 million negative flow.

**Table 2.1-1 PAG Financial Performance Indicators, Fiscal Years 2003-2007**

| | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| **REVENUES & EXPENSES** | | | | | |
| Operating Revenues | $28,614,341 | $26,169,993 | $26,661,100 | $25,272,928 | $28,937,152 |
| Operating Income | 1,467,699 | 2,041,240 | 668,462 | (1,989,093) | 1,857,938 |
| Net Income | $414,633 | $1,882,504 | ($367,825) | $810,325 | $1,330,948 |
| Depreciation | 2,591,988 | 2,574,298 | 2,440,866 | 2,468,866 | 2,458,283 |
| Cash Flow* | $3,006,621 | $4,456,802 | $2,073,041 | $3,279,191 | $3,789,231 |
| **ASSETS** | | | | | |
| Total Assets | $60,305,700 | $61,044,678 | $63,448,427 | $62,457,837 | $64,559,426 |
| Property, Plant & Equipment | 43,935,017 | 42,324,090 | 42,692,538 | 42,562,936 | 47,058,373 |

*Net Income plus depreciation
Sources: Financial Statements and Independent Auditors Reports, Deloitte, 2003-2007.

**Table 2.1-2 PAG Financial Performance Indicators, Fiscal Years 1998-2000**

| | 1998 | 1999 | 2000 |
|---|---|---|---|
| **REVENUES & EXPENSES** | | | |
| Operating Revenues | $27,423,000 | $23,888,000 | $18,314,000 |
| Net Income | $3,380,000 | ($3,728,000) | ($7,179,000) |
| Depreciation | 3,026,000 | 3,181,000 | 3,556,000 |
| Cash Flow | $6,406,000 | ($547,000) | ($3,623,000) |

*Net Income plus depreciation
Source: Comprehensive Review of Tariff, the Cornell Group, January 2002.

The financial data also show that the PAG has not been investing in facility improvements and modernization in recent years. The asset value of PAG's property, plant and equipment declined slightly between 2003 and 2007, with the exception of the purchase of the mobile harbor crane in 2007. Depreciation expenses also declined slightly between 2003 and 2007.

## 2.2 Key Financial Management Actions Since 1993

Over the past 15 years, the following key financial management actions were taken or explored by PAG:

- 1993 – The current PAG Terminal Tariff was established in 1993. Since that time, no tariff increases have been implemented on basic tariff revenue items such as throughput, wharfage and dockage.
- 2002 – In January 2002, The Cornell Group completed the Comprehensive Review of Tariff for PAG. This study made numerous recommendations as to the tariff rate structure and tariff increases; however no action was taken as a result of the study.
- 2002 - In May 2002 PAG introduced policy memorandums with regards to container rates, labor charge out rates, arbitration, claims and wharfage. The major impact on these policy memorandums is to cancel the former board policy memorandum allowing 50% chassis rule to give the carriers a lower rate even without available chassis for the incoming container.
- 2005 – PAG issued a Privatization RFP for Cargo Operations within the Jose D. Leon Guerrero Commercial Port in April 2005. Three proposals from private operators were evaluated as a result of the RFP, however no action was taken since negotiations did not result in an agreement satisfactory to the Port.
- 2007 – PAG implemented a variety of new rates and miscellaneous tariff increases in 2007, including a new fuel surcharge and maritime security fee, and increased rates for transshipment throughput, labor charge out on miscellaneous services, equipment rental, longliner throughput, and demurrage. None of the basic rates for throughput, wharfage or dockage were increased at this time.
- 2008 – PAG is currently poised to issue an RFP for a private party to manage maintenance services under a PMC contract. The PMC would manage facility and equipment maintenance, provide procurement services, and have the option to acquire, finance and lease back various capital improvements for the port. Under the RFP the contractors may propose providing additional services beyond maintenance and procurement. We understand that PAG may in the future include RFPs for a PMC to manage terminal operations.

# Section 3 Financial Model Framework & Design

This section addresses the technical aspects of the financial model development, the model's overall architecture and its detailed design.

## 3.1 General Model Framework

### 3.1.1 Objectives

The overall goal of the financial model is to simulate PAG's financial performance at reasonable level of accuracy under existing conditions and project or estimate alternative future scenarios. This will enable PAG managers and policy makers to evaluate policy options and decide on an optimal financing and funding strategy with confidence as to its feasibility and outcome.

The financial model is designed to address the following types of scenarios:

- Alternate volume levels, particularly relative to the Defense Department base buildup and related construction volumes
- Alternate pricing strategies, including a military surcharge
- Alternate efficiency and cost reduction strategies, including increased crane productivity
- A no-build scenario, which will project PAG's finances assuming no port expansion to accommodate the DOD buildup and thereby identify the incremental financial impact attributable to the buildup
- A private operator scenario
- Alternative crane or equipment acquisition scenarios
- Various all-grounded operation scenarios, including the impact of an all-grounded operation during the peak volumes of the buildup

Additional considerations in the development of the model included the ability to:

- Separate the analysis by business line where possible (such as containers, breakbulk, cement, leases, commercial fishing, cruise vessels, marinas and harbor services). However the focus of the model is on the commercial cargo terminal.
- Identify variable and fixed costs separately, allocate variable costs by business line, and allocate fixed costs by business line to the extent possible
- Incorporate changes in lease revenues due to relocations
- The model is based on terminal cranes being owned by PAG and operated by PAG personnel

### 3.1.2 Model Architecture

The financial analysis model is built using Excel spreadsheet software[2], with each scenario contained in a separate Excel workbook. Accompanying Excel workbooks contain the forecasted cargo volumes that drive the model. The data and formulas from the two workbooks and the spreadsheets within each workbook are linked, resulting in an integrated model estimate of PAG's finances. The key features and components of the model are delineated and discussed below.

[2] *The model runs on Microsoft Excel Vista (Office 2008) software and may not be fully functional on earlier versions of Excel software.*

**Key Features**

The key features of the financial analysis model include the following:

- The model integrates a very broad range of factors affecting PAG's existing and future financial performance, including market, operating, pricing, management and policy issues
- Specifically, it incorporates the ability to test alternatives based on a broad range of input variables affecting PAG's financial performance, and alternate financing and funding schemes, including:
  - Cargo volumes
  - Labor manning
  - Crane productivity
  - Grounded vs. chassis operations
  - Tariff and non-tariff pricing escalation
  - Special military surcharge rates
  - Labor cost, non-labor cost and capital cost escalation factors
  - Future maintenance & replacement capital requirements, including refurbishment of F2 and F3
  - Interest rate earned on invested PAG funds
  - Coverage ratio required for borrowing
  - Interest rate on borrowing
- The model results are calibrated to PAG's actual audited FY2007 financial statements.
- The model produces key investment analysis and financing metrics relative to the Master Plan CIP including:
  - Internal rate of return (IRR)
  - Net present value (NPV)
  - Estimated maximum bonding/borrowing capacity
  - Estimated annual bond/loan payments
- Revenues are based on actual tariff rates and estimates of detailed breakdown of carrier volumes by container size, grounded vs. chassis, load vs. empty, inbound vs. outbound, local vs. transshipment, and breakbulk by cargo category.
- The model includes a simulation of the critical variable costs associated with container and breakbulk cargo operations based on the volume per ship by carrier type, the number of cranes assigned to each ship by shift, estimated manning schedules for vessel, yard and gate operations, and existing and future crane productivity.

### 3.1.3 Revenue & Expense Format

As stated above, the model reorganizes PAG's FY2007 Revenue & Expense Breakdown into a revised format for use in the financial feasibility study. The identity of each individual line item from the Revenue & Expense Breakdown is maintained in the revised format, and the key bottom line financial performance measurements in the revised format reconcile exactly to PAG's audited financial statement for FY2007. These key measurements are:

- Operating Income – $1,857,938 – Called "Earnings (loss) from operations" in the audited financials.
- Net Income – $1,330,948 – Called "Earnings before capital contributions" in the audited financials.
- Unencumbered Cash Flow – $3,789,231 – Not shown in the audited financials; equal to Net Income plus depreciation (a non-cash expense).

The revenues and expenses are separated into those relating to PAG's cargo operations and PAG's landlord port authority operations resulting in a separate P&L for each and consolidated bottom line results. Separating the financials into these two functions enables the model to simulate a lease or

management agreement with a private operator under Guam's PMC laws. Allocations of fixed costs between the cargo operation and landlord port operation can be adjusted with input variables.

### 3.1.4 Model Calibration with FY2007 Audited Results

The model results were calibrated against PAG's actual audited financial results. As a result of the calibration, it is evident that the model produces results that are close to actual conditions. Cargo operation revenues from the model are 1.2% lower than actual; direct cargo operation expenses are 2.3% lower than actual; and bottom line cash flow from the model is only 0.3% ($12,981) higher than actual. The key calibration results are shown in the table below.

**Table 3.1-1 Financial Model Calibration Results**

| CATEGORY | FY 2007 ACTUAL | FY 2007 MODEL | VARIANCE | PERCENT |
|---|---|---|---|---|
| Cargo operation revenues – container | $23,763,021 | $23,326,863 | ($436,158) | -1.8% |
| Cargo operation revenues – breakbulk | $1,471,428 | $1,617,023 | $145,595 | 9.9% |
| Total operating revenues – cargo ops | $25,235,949 | $24,943,885 | ($292,063) | -1.2% |
| Direct operating expenses – cargo ops | $13,086,420 | $12,781,375 | ($305,044) | -2.3% |
| Net income (loss) – consolidated | $1,330,948 | $1,343,929 | $12,981 | 1.0% |
| Unencumbered cash flow – consolidated | $3,789,231 | $3,802,211 | $12,981 | 0.3% |

## 3.2 Detailed Model Design

### 3.2.1 Volume Forecast

The volumes used in the financial analysis are a refinement of those developed for the 2007 Master Plan Update. 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.

At a micro level the forecast breaks down container and cargo volumes by:

- Carrier group (CNMI, FSM/MI, Asia and USWC)
- Container vs. breakbulk
- Container size
- Inbound vs. outbound
- Load vs. empty
- Grounded vs. chassis
- Local vs. transshipment
- Transshipments by carrier group pairs (i.e., USWC-CNMI, USWC-FSM/MI, Asia-CNMI and Asia-FSM/MI)
- Dry or reefer vs. OOG
- Breakbulk cargo by category (e.g., breakbulk, unitized, pre-slung, ro-ro, bulk scrap etc.)

The container and cargo volumes are contained in a separate Excel workbook that is linked to the financial model workbook.

### 3.2.2 Financial Model Organization

As stated above, each model scenario is contained in a separate Excel workbook. The various components of the model are organized into separate spreadsheets, or tabs, in each financial model workbook. The key tabs are:

- Tariff – All of the applicable rates from PAG's tariff are organized on the "Tariff" spreadsheet for containers, breakbulk cargo and other chargeable cargo/vessel activities.
- TarList – The "TarList" spreadsheet applies the tariff rates to every possible combination of container and breakbulk cargo type (e.g., by container size, grounded vs. chassis, etc.)
- Variables – Key operating, productivity, manning, cost escalation, pricing escalation, and other input variables are identified and organized on the "Variables" spreadsheet.
- Thruput – The "Thruput" spreadsheet integrates the yearly cargo forecast data to 2040 from the Volumes workbook, tariff rates from the "Tarlist" tab and variables from the "Variables" tab. The Thruput data are organized by cargo type (container and breakbulk) and by carrier group within each cargo type (CNMI, FSM/MI, Asia and USWC). Volumes in the Thruput spreadsheet are broken down on the basis of containers (or tons) per vessel and number of vessels per year.
- DirRev – The data from the "Thruput" tab are translated into annual direct revenues by cargo type, carrier group and tariff item on the "DirRev" spreadsheet. Direct revenues are projected to 2040 based the pricing escalation factor in "Variables".
- Salaries – PAG's labor cost per hour by job category are organized on the "Salaries" spreadsheet. These are weighted averages of the fully loaded costs based on PAG's Staffing Pattern report.
- DirLab – The data from the "Thruput" spreadsheet are translated into annual direct labor costs by cargo type, carrier group and job category on the "DirLab" spreadsheet. Direct labor expenses are projected to 2040 based the labor cost escalation factor in "Variables".
- Assets – PAG's asset list is organized into asset categories on the "Assets" spreadsheet, which shows the original acquisition cost, life, annual depreciation cost and net book value for each asset.
- Cap&Dep – The "Cap&Dep" spreadsheet projects PAG's future capital expenditures and annual depreciation costs forward to 2040. Future maintenance/replacement capital and Master Plan CIP capital are both estimated by asset type (e.g., facilities, cranes, terminal equipment).
- P&LKey – The "P&LKey" reorganizes PAG's FY2007 Revenue & Expense Breakdown into a revised format for use in the financial analysis and reconciles to PAG's audited financial statement for FY2007. This is discussed further in the Revenue & Expense Format section below.
- P&LAlloc – Cost allocations between PAG's cargo operations and landlord port operations are delineated on the "P&LAlloc" spreadsheet. Most of these allocations are input variables that can be changed on this tab.
- P&L – The "P&L" spreadsheet pulls data from "P&LKey", "DirRev", "DirLab", "Variables" and other sources to project PAG's financial statement forward to 2040. The "P&L" spreadsheet computes key financial performance measures for each year out to 2040, including operating income, net income and cash flow.
- FinAnPMC – The "FinAnPMC" spreadsheet is only used in analyzing potential PMC scenarios. This sheet computes several key financial analysis measurements for the PMC company based on private sector financial standards.
- FinAnPAG – The "FinAnPAG" spreadsheet computes several key financial analysis measurements for PAG based on the results in the "P&L" spreadsheet and the "Cap&Dep" spreadsheet. Inputs include the cash flow after maintenance/ replacement capital, discount rate, coverage ratio and interest rate. Outputs include the internal rate of return (IRR), net present value (NPV), cash flow available for bond/loan payments, estimated maximum borrowing capacity and estimated annual bond/loan payments.

# 3.3 Model Outputs

## 3.3.1 Operating/Financial Performance

**Revenue & Expense Statement**

The financial model produces a complete statement of revenues and expenses (profit and loss) year by year through 2040 for PAG's:

- Cargo operations – Including containers, breakbulk, equipment maintenance and terminal security
- Traditional "landlord port" operations – Including the harbor master, port police, leases, marinas and facility maintenance
- Consolidated operations

This structure facilitates the analysis of cargo operations as a separate business of PAG that could be performed by a private operator under a PMC contract.

**Bottom Line Measurements**

The key bottom line measurements of operating/financial performance produced by the model are:

- Operating Income – Measures PAG's income (after depreciation) from all business operations but excludes extraordinary non-operating financial items such as interest income, COLA/supplemental annuity payments, gains from asset disposal and earthquake/typhoon losses net of insurance.
- Net Income – Measures PAG's income (after depreciation) from all sources including business operations and extraordinary non-operating items.
- Unencumbered Cash Flow – Measures PAG's actual net cash flow by adding depreciation, which is a non-cash expense, back to net income.[3]

## 3.3.2 Investment Analysis

The investment analysis provides a measure of the Master Plan project's viability as an investment *as if PAG or some other entity had the resources available to finance the entire project on a tax-exempt basis*. This analysis assumes that PAG or another entity finances the port modernization and all future maintenance and replacement capital through 2030 on the following terms:

- Financing Term – A 20-year financing term to 2030 is assumed.
- Cost of Funds/Target Rate of Return – The cost of funds used to finance the project (and the target rate of return on the investment) are assumed to be the cost of borrowing using tax exempt revenue bonds, or approximately 5.5%.
- Internal Rate of Return (IRR) – The IRR measures the return on investment to PAG or other entity investing in the project. The Cost of Funds/Target Rate of Return provides a benchmark to determine whether the resulting IRR is acceptable.
- Net Present Value (NPV) – The NPV measures the dollar value of the investment in today's dollars, considering all of the investment outflows and operating cash inflows through 2030. A positive NPV measures the dollar value of the investment in today's terms over and above recovery of the principal amounts and the cost of funds.

## 3.3.3 Borrowing Analysis

The borrowing analysis provides an approximation of the borrowing terms and PAG's borrowing capacity based on the projected cash flows. The analysis incorporates the following assumptions and features:

[3] *Another non-cash expense that could be added is Unfunded Retirement. Because these monies may be encumbered by a future liability to fund retirement, however, it was decided that they should not be added back to cash flow.*

- Cash Flow After Maintenance/Replacement Capital – This measurement is the unencumbered cash flow from the P&L less PAG's yearly maintenance/replacement capital expenditure requirements. It is a key cash flow measurement that bond underwriters and lenders will use to determine borrowing capacity.
- Coverage Ratio – The coverage ratio defines how much annual cash flow above and beyond bond/loan payments should be considered in the analysis. Based on discussions potential lending sources, an absolute minimum coverage ratio of 1.25 may be used by lending institutions in assessing revenue bond or loan financing. However as discussed elsewhere in this report we understand that other Gov Guam agencies such as the airport and GPA use policy level coverage ratios of 1.6 and 1.75 respectively. These are preliminary values and the applicable coverage ratio could also change depending on factors such as market conditions, actual lending institution etc. at the time of issuance of debt. This range was used in this study in order to assess preliminary borrowing capacity for PAG.
- Cash Flow Available for Bond/Loan Payments – This measurement applies the required bond/loan coverage ratio to the Cash Flow After Maintenance/Replacement Capital.
- Financing Term – A 20-year financing term to 2030 is assumed.
- Interest Rate – A tax-exempt interest rate of approximately 5.5% is assumed.
- Borrowing Capacity – The net present value of the Cash Flow Available for Bond/Loan Payments (discounted at the 5.5% interest rate) is used as the estimate of PAG's estimated borrowing capacity. Note that the model is structured to estimate the net proceeds of the bond/loan available to the Master Plan CIP Project. It does not break out detailed financing related line items such as reserve fund, capitalized interest fund and closing costs. Accordingly, unless otherwise identified in this report "borrowing capacity" refers to the net proceeds of the bond/loan available to the Master Plan CIP Project for execution.
- Annual Bond/Loan Payments – Based on the Borrowing Capacity, Interest Rate and Financing Term, the Annual Bond/Loan Payment is calculated, assuming level payments throughout the 20-year term.
- Working Capital (Cash) Balance – PAG's Working Capital (Cash) Balance is estimated for each year, based on a starting balance of some $15-$16 million, with additions from operations and subtractions for maintenance/replacement capital and bond/loan payments each year. The Working Capital (Cash) Balance is calculated both in future year dollars and 2008 dollars (discounted at the 5.5% interest rate).

# Section 4 Financing & Funding Options

Section 4 addresses the financing and funding sources used by U.S. public ports and identify the major sources available to PAG. As used in this analysis, "financing" refers to various borrowing methods for port infrastructure development that require repayment and "funding" refers to various grant or other sources that do not require repayment.

## 4.1 Port Funding in the United States

The U.S. Maritime Administration (MARAD) in conjunction with the American Association of Port Authorities (AAPA) has tracked port expenditures on capital improvements for several years. The process involves surveying port authorities regarding the type of expenditure and funding mechanisms. These reports are prepared by MARAD, using expenditure information furnished by AAPA. The survey data is obtained by AAPA from its U.S. corporate membership, which include public port agencies located throughout the U.S., including the Port Authority of Guam. These reports[4] are the most comprehensive sources of funding by U.S. ports.

As shown, in Table 1, there are six primary sources of capital funds: port revenues, general obligation bonds (GO bonds), revenue bonds, loans, grants, and other sources. These sources of funds are further reviewed in this section.

Port Revenues include income generated by the port through its operations[5]. Port revenues have always been a major source of capital funding, accounting for at least 30% of overall funding. In recent years, funding from port revenues has represented around 50% of all capital funding. The Port of Guam uses funding from port revenues to cover smaller capital projects (i.e., facility planning, design and engineering, small capital expenditures like forklifts and crane spreader beams, IT equipment and software, and maintenance, among other items).

General Obligation (GO) Bonds are issued by a state, city, or local government. They are secured by the taxing and borrowing power of the issuing jurisdiction, rather than the revenue from a given project. The Port of Guam has not used general obligation bonds. GO bonds have increased in use in recent years and currently account for more than 17% of U.S. port capital funding. As an example, the Port of Houston has largely used GO bonds to develop its port facilities. As of the end of FY 2006 (the last data available), the Port of Houston had $366.9 million in GO bonds outstanding, which represented 94.4% of debt financing[6].

GO Bonds are not available for development of the Port of Guam because the capacity for such bonding has already been substantially committed for other purposes. The Government of Guam obtained $151,935,000 in GO Bonds in late 2007 for refunding and redeeming a portion of the Government of Guam General Obligation Bonds, 1993 Series A, funding capital projects and certain obligations of the Government of Guam, and paying expenses incurred in connection with the issuance of the bonds[7]. The capital projects included improvements at non-revenue generating government functions, such as:

- Guam Public School System
- Guam Memorial Hospital

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[4] *Source: U.S. Public Port Development Expenditure Reports, US Maritime Administration, July 2007. According to MARAD, the Port Expenditure Reports are the only report of its kind in the port industry that covers capital expenditures at U.S. ports. The first report was prepared by the Port Authority of New York and New Jersey in 1956. MARAD has been publishing this report since 1991.*

[5] *Source: U.S. Public Port Development Expenditure Reports, U.S. Maritime Administration, July 2007*

[6] *Source: Port of Houston Authority of Harris County, Texas, Comprehensive Annual Financial Report, December 2006.*

[7] *Source: Official Statement, Government of Guam General Obligation Bonds 2007 Series A, dated November 15, 2007, page 24.*

- University of Guam
- Other Government Obligations

Revenue Bonds are issued by a state, city, or local government to finance public works projects. Bond principal and interest are secured by the revenues of a given project. The Port of Guam has not issued revenue bonds to date. Due to the current problems in the subprime housing market, lenders are requiring a larger debt service coverage factor, which constrains the potential size of revenue bonds. Revenue bonds have been an important element of capital funding, representing approximately 15% of port capital funding since 2000. The Port of Oakland issued $503 million in revenue bonds in October 2007 for a variety of projects in the airport, seaport and real estate divisions.

Loans are money that an entity owes a lender and can be short or long term, based on when they will be paid off. This financial transaction is provided at a cost, referred to as interest on the debt. The Port of Guam has used loans to finance capital improvements, including loans from private banks, which are substantially guaranteed through the USDA (90% of loan value). There are opportunities for the Port Authority of Guam to increase its use of loans, described in a later section. Loans have represented a small portion of U.S. port capital funding at approximately 2% of total port funding.

**Table 4.1-1 Sources of U.S. Port Funding for Capital Improvements (% of Total)**

| Year | Port Revenues | G.O. Bonds | Revenue Bonds | Loans | Grants | Other |
|---|---|---|---|---|---|---|
| 1979-89 | 47.7% | 14.8% | 27.0% | 2.5% | 2.5% | 5.5% |
| 1989 | 59.1% | 6.4% | 18.6% | 8.0% | 1.1% | 6.8% |
| 1990 | 35.2% | 8.8% | 40.1% | 1.5% | 7.0% | 7.4% |
| 1991 | 47.1% | 15.8% | 20.5% | 4.2% | 5.1% | 7.3% |
| 1992 | 34.0% | 12.7% | 26.9% | 3.8% | 5.0% | 17.6% |
| 1993 | 50.6% | 11.5% | 22.8% | 0.8% | 4.2% | 10.1% |
| 1994 | 35.3% | 10.3% | 14.9% | 16.0% | 2.8% | 20.7% |
| 1995 | 45.6% | 8.5% | 26.9% | 0.9% | 3.0% | 15.1% |
| 1996 | 31.7% | 9.4% | 42.6% | 1.1% | 2.5% | 12.7% |
| 1997 | 30.4% | 10.0% | 47.1% | 0.5% | 8.1% | 3.9% |
| 1998 | 33.8% | 6.6% | 40.9% | 1.1% | 10.4% | 7.2% |
| 1999 | 44.4% | 7.8% | 21.4% | 6.6% | 14.0% | 5.8% |
| 2000 | 48.1% | 9.1% | 10.9% | 3.8% | 16.0% | 12.1% |
| 2001 | 51.0% | 6.1% | 28.5% | 0.8% | 6.0% | 7.6% |
| 2002 | 38.3% | 23.4% | 13.2% | 4.2% | 7.7% | 13.1% |
| 2003 | 49.5% | 13.6% | 14.7% | 3.0% | 6.6% | 12.6% |
| 2004 | 31.0% | 35.8% | 19.0% | 0.9% | 7.5% | 5.8% |
| 2005 | 69.4% | 17.0% | 5.3% | 0.4% | 4.6% | 3.4% |
| 2006-10 | 53.3% | 17.7% | 16.6% | 0.2% | 2.8% | 9.5% |

Source: U.S. Public Port Development Expenditure Reports, U.S. Maritime Administration, July 2007 and earlier years

A grant is a contribution of cash by one government entity (or other organization) to another. Many times these contributions are made to local governments from state and federal governments. Grants are used to support a public purpose and do not have to be repaid. Grants have accounted for approximately 7% of U.S. port funding. Key sources of federal grants have included Department of Homeland Security, Transportation Security Administration, Economic Development Administration, Federal Highways

Administration, and U.S. Department of Transportation, among others. The Port of Guam has received several grants from several of these sources.

The "Other" category includes all financing sources that were not described above, such as state transportation trust funds, state and local appropriations, and taxes (property, sales). This includes earmarks from state legislations, grants from state Department of Commerce, settlement proceeds and sales proceeds. Funds from the other source accounted for around 9% of total U.S. port funds.

## 4.2 Major Sources of Financing (Borrowing) for PAG

The major sources of readily available financing for the Port of Guam for its Capital Improvement Program (CIP) appear to be revenue bonds, and USDA guaranteed loans. These sources are reviewed in this section.

### 4.2.1 Revenue Bonds

The Port of Guam may issue Revenue Bonds secured by a pledge of its future revenues to repay the bonds over time. Port Revenue Bonds are typically issued on a fixed-rate basis for a term of up to 30 years. As a governmental agency, the Port can issue bonds for most projects on a tax-exempt basis, meaning that investors who hold the bonds pay no federal income taxes on the interest they receive. As a result, the Port is able to pay lower interest rates than are paid on taxable bonds, which provides for significantly lower financing costs. The use of tax-exempt financing, however, subjects the Port to complex federal regulations regarding the management and use of the bond proceeds.

Revenue bonds as a major financing option have been examined at length, including discussions with GEDCA, Banc of America Securities LLC (BOFA), GEDCA's financial advisor and other investment banks.

- BOFA has used minimum coverage ratio of 1.25 for the preliminary pro-forma financing analysis included in Appendix 6. When using coverage ratios as related to management policy the values would be higher.
- It could be argued that it may be difficult to qualify PAG revenue bonds as investment grade with the rating agencies because of PAG's lack of any history in the bond market, PAG's institutional structure as an arm of Gov-Guam, and a perception that PAG's management practices may lack sufficient rigor to produce the projected results. However BOFA's initial review is cause to be optimistic that PAG revenue bonds for the project could be classified at the low end of the range of investment grade bonds.
- PAG's greatest strengths with the rating agencies are its virtual monopoly position, and therefore its potential pricing power, and the certainty of the DOD buildup.

### 4.2.2 USDA Community Facilities Guaranteed Loan Program

The Port has obtained a commitment for $17.5 million in loans via USDA, composed of: 1) $2 million direct loan and $12 million guaranteed loan through CSB for purchasing 2 gantry cranes, 2) $3.5 million guaranteed loan through CSB for purchasing other cargo handling equipments.

The Community Facilities Guaranteed Loan Program provides a loan guarantee for essential community facilities, including port facilities. Under this program, USDA guarantees up to 90% of loans by eligible lenders (i.e., banks or other qualified lending agencies). Applicants must have the legal authority to borrow and repay loans, to pledge security for loans, and to construct, operate, and maintain the facilities. They must also be financially sound and able to organize and manage the facility effectively.

The interest rate is negotiated between the lender and the applicant. It may be fixed, variable, or both. Loan payments must be amortized. Loan terms are for the estimated useful life of the facility or no more than 40 years. Under the existing USDA direct and guaranteed loans described above, the interest rates were 4.12% for the USDA direct loan program amount and 5.74% for the cranes and 5.48% for other cargo handling equipment for the CSB loans.

The Housing and Community Facilities Programs can guarantee up to 90% of the value of the loan. The guaranteed portion is backed by the full faith and credit of the U.S. government and can be sold on the secondary market. An Assignment of Guarantee, representing the guaranteed portion is issued by the Rural Housing Service of USDA Rural Development; and the agency pays all principal and interest in the event of a loss. The non-guaranteed portion absorbs the loss, if any. Overall, USDA guarantees up to 90% of any loss of principal or interest. The guarantee fee is 1% of the guaranteed portion of the loan and is paid by the Lender of Record, or may be passed on to the borrower.

The USDA Farmer's Credit Administration's Rural America Group and their financial firm, Morgan Keegan, has been collaborating with Government of Guam officials to determine creative ways to fund critical healthcare, education, infrastructure and housing projects. USDA is currently working with the Port of Guam to assess a more comprehensive funding package that addresses the Port's $195 million 2007 Master Plan Update CIP funding requirement. This effort would likely take advantage of Community Facilities Guaranteed Bond financing through a private lender.

The largest guaranteed loan completed by USDA to date was a $76 million project in Virginia[8]. There is no statutory limit to funding, but there is a potential limit based upon available funds. The amount of funds available for Guam is currently unclear.

In addition, USDA has a direct loan program, which has a limit of $5 million per project.

## 4.3 Major Sources of Funding for PAG

### 4.3.1 U.S Department of Transportation Maritime Administration (MARAD)

MARAD's Office of Infrastructure Development has become active in assisting in management, funding and developing of port facilities. This program is designed to promote and plan for the development and utilization of domestic waterways, ports, and port facilities, to provide technical advice and information to Government agencies, private industry and State and municipal governments; to support the laws reserving domestic waterborne commerce to U.S. built, owned, and registered vessels for reasons of national security and economic development, examine opportunities for expanding Maritime trade and service; to plan for the utilization and control of ports and port facilities under national mobilization conditions; to promote development and improved utilization of marine related intermodal transportation systems; to provide technical information and advice to other agencies and organizations concerned with intermodal development; to formulate national and regional policies and objectives for development and use of intermodal transportation systems including containerization and container size standards; to develop plans, coordinate pilot operations concerned with improved techniques in marine-related intermodal transportation; to assist in planning and development of intermodal transport systems under national mobilization conditions. MARAD provides advisory services and counseling through this program.

As an example, an MOU was signed between MARAD and the Port of Anchorage in 2003, which is guiding port expansion in Anchorage. The Port of Anchorage's Port Intermodal Expansion Program (PIEP) is a $700 million project aimed at upgrading and expanding port infrastructure in Anchorage. MARAD has been assigned as the Federal Lead Agency for Port development. MARAD has selected a subcontractor to help provide project management services for the expansion project. It is being funded through a combination of federal, state and local financial resources with a goal of incremental development over an 8 year period. Federal funds are anticipated to come from the Department of Defense, the Federal Highway Administration, the Federal Transportation Administration, and the Economic Development Administration (EDA).

MARAD is beginning to provide similar assistance to more ports as part of its new focus on enhancing freight mobility and reducing congestion to accommodate military deployments.

[8] *Source: Communication with Mr. Joseph Diego, Rural Development Manager, Guam.*

The Port of Guam has signed a similar memorandum of understanding with MARAD to assist in the modernization of the facilities at the Port of Guam. Under this MOU, MARAD will serve as the project management team (PMT) coordinating project development.

Specific MARAD responsibilities include[9]:

- Coordinate with other Federal agencies that receive annual Congressional appropriations and other funding that are identified for the PROJECT.
- Provide PAG, and its authorized agents and representatives, with technical expertise and input as requested by the PAG for PROJECT tasks and activities.
- Designate primary Maritime Administration points of contact for day-to-day management of PROJECT activities.
- Develop and execute all financial documents as required for the transfer to and administration by the Maritime Administration, of Federal and non-federal amounts received and released by the Government of Guam or the PAG for PROJECT activities.
- Work, with PAG and other relevant parties, to identify, secure, and transfer the resources necessary to support the Maritime Administration's participation in the PROJECT.
- Adhere to all applicable Federal laws, including regulations and guidance on funding appropriations, acquisitions, and grants and local regulations, as applicable, in the execution of the PROJECT.
- Obligate and disburse funding for the PROJECT oversight, program management, environmental studies and analysis, the National Environmental Policy Act (NEPA) process, permitting, design, engineering, construction, or rehabilitation pursuant to the PROJECT including being responsible for all financial reporting requirements consistent with the contract and all funding compliance requirements related to or associated with the PROJECT.

Specific PAG responsibilities include:

- The PAG or its authorized agents and representatives, shall provide overall and specific program requirements and direction of the PROJECT to the Maritime Administration.
- To the extent authorized by law, the PAG will:
- Execute documentation, as deemed necessary, that will enable the Maritime Administration to request interagency funding transfers of all identified amounts received by other Federal agencies from present and future annual Congressional Appropriations for the PROJECT.
- Transfer funding identified for the PROJECT to the Maritime Administration. The PAG and other entities may elect to provide additional funding under this MOU.
- Authorize all PROJECT funding maintained by the Maritime Administration for activities to support the PROJECT.
- Designate primary PAG points of contact for management of PROJECT activities.

We also understand that MARAD will be reimbursed with a 3% fee on new Federal Grants that is identified and included in the funding basket for implementing the project.

Congresswoman Madeleine Bordallo has introduced legislation (H.R. 6007) to create a Port Development Fund with a goal that the fund be established by the end of September 2008. Any funds received for port development will be placed in this fund to facilitate port development. In addition, designation of the Port of Guam as a U.S. strategic port could further help with securing funding.

[9] *Source: Memorandum of Understanding between the Government of Guam Port Authority of Guam and the U.S. Department of Transportation Maritime Administration, dated May 9, 2008.*

## 4.3.2 U.S. Department of Defense

### Office of Economic Adjustment

The Office of Economic Adjustment, a field activity within the Office of the Secretary of Defense, is the primary entity responsible for assisting communities impacted by defense program changes. The OEA is assisting communities that are expected to be significantly impacted by growth as a result of force structure initiatives.

Grant Federal Assistance (funds) from OEA is limited to planning studies, analysis, special studies, and capacity building to local jurisdictions. The assistance can be used to hire professional consultants, to support staffing requirements, and for office operational expenses. OEA assistance is not for construction activities. OEA Grant Policies require a 10% match of the approved project budget. Projects are typically funded in one-year increments.

### Defense Access Road

The Defense Access Road (DAR) program provides a method for DOD to pay for public highway improvements required as a result of sudden or unusual defense-generated traffic impacts. Projects may be eligible for funding based on the following five criteria:

- A new access road to a facility is needed.
- A defense action causes traffic to double.
- A new or improved access road is needed to accommodate a temporary surge in traffic due to a defense action.
- A new or improved access road is needed to accommodate special military vehicles.
- A road is needed to replace one closed for defense needs.

- The Army's fiscal year 2009 budget request includes $36.2 million for one growth-related road project to provide a new access road to Fort Belvoir, Virginia. If the Army's budget request is approved by Congress, base officials expect this project to be completed by the end of fiscal year 2010. The DAR is not an independently funded program. Projects submitted to and approved under the DAR program require the Military Services to request specific funding in their budget. Four installations have projects that base officials have submitted or are planning to submit in the future:

- Fort Lee has a $4.5 million project based on doubling of traffic.
- Fort Bliss has a $7.2 million project for a new access road.
- Fort Carson has a $1 million project for a new access road.
- Fort Bragg has a $25 million project for a replacement road.

### Congressional Projects

Supplemental appropriations and earmarks have also been used to help fund capital improvements required by DOD buildups. In Anchorage, earmarks are a major source of funding improvements to the intermodal system. The President's budget for FY2007 contains $10 million for intermodal marina facility at the Port of Anchorage. These funds are administered through the OEA[10]. A similar process could be used to fund improvements at the Port of Guam.

## 4.3.3 Other Federal Grant & Loan Programs

The Port of Guam has received several grants and loans from various sources in the recent past to fund port development projects. This section reviews key programs that could assist in partial funding of the Port of Guam CIP.

[10] *Source: Fiscal Year (FY) 2008/FY 2009 Budget Estimates for the Office of Economic Adjustment, February 2007.*

### Department of Interior Office of Insular Affairs (DOI OIA)

The Department of Interior Office of Insular Affairs (DOI OIA) is another potential funding source for port improvements. The Government of Guam received $4.2 million from OIA for a variety of projects, of which $2.0 million was designated for gantry crane fabrication and installation at the Port. Other funds may also be available for Port development.

The Outer Pacific Committee (OPC), which deals with issues on Guam (as well as American Samoa and the CNMI) and the FSM, RMI and ROP, has "been involved in deliberations and strategy development with the federal effort to assist Guam in preparing for the arrival of approximately 8,000 marines and their dependents". The OPC will continue to work with the Interagency Group on Insular Affairs on the proposed DOD buildup in Guam.

### U.S. Economic Development Administration (EDA)

The Public Works and Economic Development Program is the primary EDA program that could be used by the Port of Guam for capital improvements. This program supports the construction or rehabilitation of essential public infrastructure and facilities necessary to generate or retain private sector jobs and investments, attract private sector capital, and promote regional competitiveness, including investments that expand and upgrade infrastructure to attract new industry, support technology-led development, redevelop brown-field sites and provide eco-industrial development.

Generally, EDA investment assistance may not exceed 50 percent of the project cost. Projects may receive an additional amount that shall not exceed 30 percent, based on the relative needs of the region in which the project will be located, as determined by EDA. However, the Assistant Secretary has the discretion to establish a maximum EDA investment rate of up to 100 percent of the total project cost.

While contributions are preferred, in-kind contributions, such as contributions of space, equipment, assumptions of debt, and services, may provide the required non-federal share of the total project cost.

In FY 2006, Public Works investments ranged from $55,000 to $3,500,000, with an average investment of $1,270,134.

The Port of Guam has received EDA funds in the recent past. New Wharf and Land Reclamation - The Port Authority of Guam received a $1.5 million federal grant from the Economic Development Administration for Architectural and Engineering Design and E.I.S. for Deep Wharf in Apra Harbor.

### U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers designs and constructs selected navigation projects. Each project selected must be: feasible (executable), a complete action within itself, and justified economically. The nonfederal sponsoring agency must agree to assume full responsibility for all project costs in excess of the Federal cost limit of $4,000,000; equally share with the Federal government the cost of feasibility studies; contribute toward project costs for construction and maintenance in view of recreational benefits, land enhancement benefits or other special local benefits; provide all necessary lands, easements, rights-of-way; hold and save the United States free from damages; and, provide adequate public landing or wharf, piers, access roads, parking areas and other needed public facilities open and available to all on equal terms. Local cost participation requirements and procedures for determining the local share of project cost are similar to those for navigation projects specifically authorized by Congress under regular authorization procedures. No project is to be recommended for implementation under the Section 107 authority for which the total constant dollar Federal costs over 50 years exceed the greater of $4,500,000 or 2.25 times the Federal construction cost, both discounted at the current water project discount rate.

Project planning studies are undertaken as a single feasibility phase. The first $100,000 is federally funded. Additional study costs are cost-shared 50/50 with the local sponsor. Cost-sharing is required for project construction and consists of cash; provision of lands, easements rights-of-way and relocations necessary for the project and other requirements.

**Transportation Infrastructure Finance and Innovation Act (TIFIA) Program, Federal Highway Administration, U.S. Department of Transportation**

The TIFIA program's purpose is to finance projects of national or regional significance by filling market gaps and leveraging substantial non-Federal and private co-investment. TIFIA credit assistance is intended to facilitate the financing of projects that would otherwise have been significantly delayed because of funding limitations or difficulties accessing the capital markets. Through TIFIA, the DOT provides Federal credit assistance to eligible highway, transit, rail, and intermodal freight projects, including access to seaports.

Highway, transit, rail, freight facilities, and certain port projects (intermodal access) may receive credit assistance through the TIFIA program. TIFIA funded generally consists of direct loans or guaranteed/insured loans. The principal amount of the requested credit assistance must not exceed 33 percent of eligible project costs. Historically, loans have ranged from $42 million to $917 million.

**Other Programs**

The Port has also received grants from the Transportation Security Administration (TSA) and Department of Homeland Security (DHS) to fund security programs (lighting, gate surveillance systems etc).

Resources may also be available from other federal agencies.

## 4.4 International Financing & Funding Mechanisms

There are numerous international agencies (U.S. Agency for International Development, Asian Development Bank, World Bank, European Bank for Reconstruction and Development, Inter-American Development Bank et al) that provide funding for port development. However, it is unlikely that these agencies will fund the Port of Guam. Most funding is for lower income areas. In addition, Guam is not a member country of most of these agencies.

As indicated previously, the government of Japan will provide up to $6.09 billion for construction of the Marine Corps base. However, these funds are designated for support infrastructure, including on base power and water systems, and military family housing. We understand that it is unlikely that the government of Japan would finance infrastructure improvements at the Port of Guam.

### 4.4.1 Japanese Government Finance Sources

Another potential source of funds could include financing by the Japanese Government. This may be similar to proposed financing for the US Marine housing in which the Japanese Government will provide up to $6.09 billion of the total $10.27 billion up-front construction cost for the realignment, consisting of:

- $2.8 billion in direct payments to the U.S. for operational and support infrastructures, and
- $3.29 billion in equity investments and loans to special purpose entities that will provide housing and utilities.

In addition to a direct outlay of $2.8 billion, the government of Japan is expected to provide $3.3 billion in loans and equity investments for installation support infrastructure, such as on base power and water systems, and military family housing. Most of the $3.3 billion is expected, over time, to be recouped by Japan in the form of service charges paid by the U.S. government and in rents paid by American service members from their overseas housing allowance provided by DOD[11].

The Japanese Government may also consider potential funding for port improvements. It would likely be a low interest loan with a long payback period (terms unknown at this stage). However, it is likely that

[11] Source: GAO Testimony Before the Committee on Energy and Natural Resources on May 1, 2008; U.S. Senate Planning Efforts for the Proposed Military Buildup on Guam Are in Their Initial Stages, with Many Challenges Yet to Be Addressed Statement of Brian J. Lepore, Director Defense Capabilities and Management, Page 15.

the funds would be used to hire Japanese contractor(s) who would propose a turnkey delivery based on their contract costs.

The Japanese Government has financed port development in a number of other countries (usually developing countries). It is unknown whether this type of financing would add to the proposed CIP budget established in the recently completed PAG Master Plan.

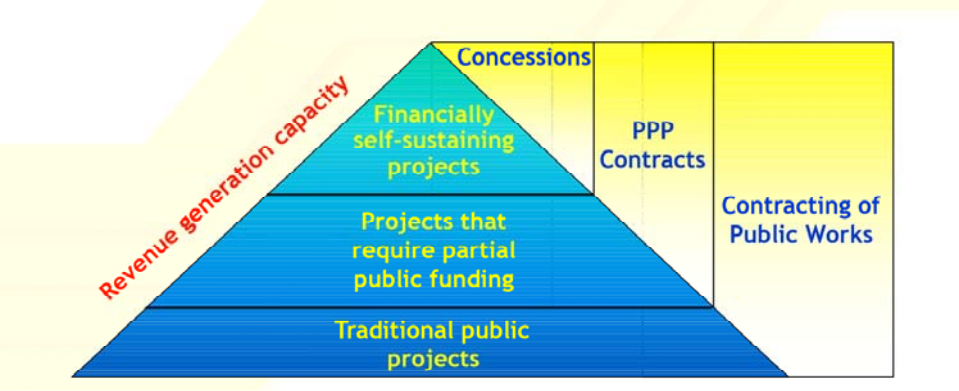
If this option looks attractive in the future especially in the absence of other sources of funding, it should be explored with other alternative sources of funding and delivery before implementation.

## 4.5 Public-Private Partnership Mechanisms

There is increased interest in public private partnerships among public ports. A Public-Private Partnership is a contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility.

In general, PPPs focus on projects that have a sufficient revenue stream to induce a concession or projects that require partial public funding which also rely on private resources to achieve financial feasibility.

**Figure 4.5-1 Decision Process on PPPs**




There is strong interest from infrastructure funds in the ports sector for several reasons[12]:

- Infrastructure buyers have looked towards ports and terminal operating companies as having many similar characteristics to toll roads and other like assets:
  - Ports have steady volumes,
  - There are high barriers to entry from competitors,
  - Generally, there are annual price increases (linked to CPI).
- Ports have slightly higher competitive and operating risks, and tend to have lower debt levels than toll roads.

From the investor's viewpoint, understanding what pricing power exists at the port is a critical point for due-diligence. The revenue generation capacity of each investment determines the best way of implementing the project.

From the public sector view, PPPs can provide significant benefits:

[12] *Source: Infrastructure investments: opportunities offered by Public-Private Partnerships, Minister Guido Mantega, Brasil & Parceiros, June 23rd, 2004*

- Construction and operation risks are transferred to the private sector, which induces efficiency,
- The public sector shares demand risk, making investment viable,
- Leverage of fiscal resources, allowing higher levels of investment than through traditional mechanisms, while complying with the Fiscal Responsibility Law and maintaining a fiscally responsible stance,
- Faster completion of projects, implying lower costs,
- Optimal allocation of risks (suitable to market characteristics),
- Higher-quality services and incentives to improve performance.

There are numerous examples of this trend. According to the World Bank, there has been $33.4 billion expended in public private investment for seaports.

**Table 4.5-1 Public Private Investments in Seaports ($ Millions)**

| Type of PPI | Payment commitments to the government* | Investment commitments in physical assets* | Total investment commitments* | Percent |
|---|---|---|---|---|
| Concession | 4,986 | 10,697 | 15,683 | 47.0% |
| Divestiture | 1,150 | 212 | 1,363 | 4.1% |
| Greenfield project | 361 | 15,781 | 16,143 | 48.4% |
| Management and lease contract | 131 | 52 | 183 | 0.5% |
| Total | 6,629 | 26,742 | 33,371 | 100.0% |

Most of the PPIs[13] are Greenfield (48.4%) or concessions (47.0%). In a concession, a private entity takes over the management of a state-owned enterprise for a given period during which it also assumes significant investment risk. The database classifies concessions according to the following categories:

- Rehabilitate, operate, and transfer (ROT): A private sponsor rehabilitates an existing facility, then operates and maintains the facility at its own risk for the contract period.
- Rehabilitate, lease or rent, and transfer (RLT): A private sponsor rehabilitates an existing facility at its own risk, leases or rents the facility from the government owner, then operates and maintains the facility at its own risk for the contract period.
- Build, rehabilitate, operate, and transfer (BROT): A private developer builds an add-on to an existing facility or completes a partially built facility and rehabilitates existing assets, then operates and maintains the facility at its own risk for the contract period.

Greenfield projects entail projects in which a private entity or a public-private joint venture builds and operates a new facility for the period specified in the project contract. The facility may return to the public sector at the end of the concession period. The World Bank classifies Greenfield projects in four categories:

- Build, lease, and transfer (BLT): A private sponsor builds a new facility largely at its own risk, transfers ownership to the government, leases the facility from the government and operates it at its own risk up to the expiry of the lease. The government usually provides revenue guarantees through long-term take-or-pay contracts for bulk supply facilities or minimum traffic revenue guarantees.

[13] *Source: World Bank Private Participation in Infrastructure Database.*

- Build, operate, and transfer (BOT): A private sponsor builds a new facility at its own risk, operates the facility at its own risk, and then transfers the facility to the government at the end of the contract period. The private sponsor may or may not have the ownership of the assets during the contract period. The government usually provides revenue guarantees through long-term take-or-pay contracts for bulk supply facilities or minimum traffic revenue guarantees.
- Build, own, and operate (BOO): A private sponsor builds a new facility at its own risk, then owns and operates the facility at its own risk. The government usually provides revenue guarantees through long-term take-or-pay contracts for bulk supply facilities or minimum traffic revenue guarantees.
- Merchant: A private sponsor builds a new facility in a market in which the government provides no revenue guarantees. The private developer assumes construction, operating, and market risk for the project.

The opportunities for a public-private partnership appear to be:

- A firm related to base construction on Guam enters into PPP to develop the Port (U.S. or Japanese firm. However, since the Port would need to be constructed prior to substantial base development and since the construction only lasts for a few years (2010 to 2014), it is unlikely that a PPP with a contractor could be secured.
- A firm engaged in transportation (carriers such as Matson, Horizon or stevedoring or terminal operator) could enter into a full or partial PPP. There has been interest from the existing carriers to bring suitable equipment to Guam (cranes, chassis, yard equipment et al). In the case of carriers, the inducement for making equipment available is likely a request for reduced tariff rates to offset the capital costs and control or first preference for equipment and facilities. Other firms such as stevedoring companies or terminal operators look for opportunities for management agreements and outright leases of facilities with capital in the form of cargo handling equipment and sometimes facilities. This could partially satisfy the equipment requirements of the master plan CIP but likely would not impact the more costly CIP elements (dock and container yard expansions et al).
- An investment firm could be induced to enter into a PPP but this would likely require a substantial increase in the tariff to justify the required return on investment by the investor and is not likely to be practical.

# Section 5 Financial Performance Scenarios

This section addresses the preliminary and refined financial analysis scenarios analyzed in the study. Using the financial analysis model described in Section 3, PBI analyzed PAG's future financial performance under numerous scenarios in order to identify key financial planning issues, quantify PAG's potential borrowing capacity and help the policy makers choose among various financial policy options.
PBI first developed 20 preliminary scenarios for review by PAG, Gov Guam and others. After presentation by PBI and review by PAG, the PAG board selected five scenarios for further refinement and analysis. PBI worked with GEDCA and its financial advisor Bank of America and provided information on the base case scenario for the purpose of generating more detailed estimates of PAG's borrowing capacity. Likewise, PBI worked with the USDA Rural Development office in Guam to estimate borrowing capacity under the USDA's Community Facilities Loan Guarantee Program.

## 5.1 Key Principles

Regardless of the specific future scenario under analysis or policy consideration by PAG, a few key principles of financial management are assumed to be followed and, as such, are incorporated into the financial modeling. These include:

- **Maintain the Port** – Once the Master Plan 2007 Update Capital Improvement Program (Master Plan CIP) port modernization and expansion is complete, it will be important to maintain the new facilities and equipment and perform ongoing maintenance that will ensure they are not subject to deterioration or failure in the future, service is not interrupted and efficiencies are maintained. Industry standard maintenance and equipment replacement practices are assumed in the scenario analyses (as discussed below) to ensure that a costly major rehabilitation of the port is not needed in the future.
- **Maintain Positive Financial Performance** – In order to maintain efficient port operations to serve the citizens of Guam, it is essential that PAG maintain positive financial performance in terms of operating income, net income and cash flow. Only by maintaining positive financial performance, will PAG be in a position to borrow funds to help pay for a portion of the funds for the modernization program or finance on-going improvements required to maintain efficient service in the future. Consequently, the scenario analyses presented below all seek to identify conditions that would result in positive cash flows through 2030 as a minimum standard of performance.
- **Control Costs Through Productivity Improvements** – As a first line of defense against annual inflation in labor and non-labor operating costs, standard practice in the port industry is to continuously seek productivity and efficiency improvements. The new cranes, equipment and computerized terminal operating system included in the modernization program will result in productivity increases and cost reductions, which are reflected in the scenarios.
- **Keep Up with Inflation** – To the extent that productivity improvements and cost controls cannot keep up with inflation, it is inevitable that periodic tariff increases will be needed to maintain positive financial performance. Again, industry standard practice is to review costs, revenues and pricing on an annual or at least five-year basis and implement tariff increases when and where appropriate. The scenario analyses discussed below assume that such a process takes place. For the purpose of the analyses, the tariff adjustments can be on an annual basis or in a step-wise three to five year cycle in order to keep up with inflation.

## 5.2 Scenario Assumptions

Based on these principles and other considerations the following key assumptions have been used in all the preliminary scenarios:

- The likely/median cargo volume forecast to 2030 is assumed.
- A schedule for full implementation is assumed, based on the currently official DOD buildup schedule:
  - The DOD base construction buildup is assumed to start in 2011 and peak from 2012 to 2015.
  - The bond/loan is assumed to be issued in 2009 and payments are assumed to begin in 2011.
  - Construction is assumed to start in 2009 and end in 2012.
  - Operation of the modernized port is assumed to start in 2012.

  We understand that in reality, this schedule may be challenging. If the DOD base construction was moved out one year it would result in slightly less conservative financial results.
- Future cost escalation rates are based on those used by Moody's Investors Service for a recent Guam Power Authority Bond issue. Based on Moody's forecast of CPI, a weighted average 4.8% inflation rate is assumed through 2030. Non-labor expenses and maintenance/replacement capital costs are assumed to rise at 4.8% annually.
- Labor costs are assumed to lag behind CPI and rise at 3.5% annually, based on the current civil service step increases used by PAG and the likelihood of a new salary scale, including Certified Technical Professional positions, after the planned compensation review is completed.
- The demand for labor will vary with variations in the demand for cargo throughput. This would include seasonal as well as variations over the years. It was assumed that the labor hours needed to handle the cargo will vary with these cargo volume fluctuations.
- Financing costs are not included in the model. These would include costs such as bond or loan financing fees or MARAD fees for management of Federal Funds etc.
- A rigorous program of equipment maintenance, equipment replacement and facility maintenance with emphasis on preventive maintenance rather than repairs is assumed:
  - A maintenance/replacement capital budget of approximately $2,600,000 per year (2008 dollars) is included for routine facility and equipment maintenance/replacement costs.
  - Refurbishment of F2 and F3 at a cost of $21,000,000 (2008 dollars) is assumed in FY2014 to FY2016.
  - Replacement of the Subic crane at a cost of $9,000,000 (2008 dollars) is assumed in 2018-19.
  - During the DOD buildup and subsequent years, equipment maintenance staffing is assumed to vary upward based on volume, which is used as a surrogate indicator for machine hours.

  This maintenance program represents industry best management practices for a modernized port. It has a significant impact on the financial analysis and PAG's borrowing capacity because it requires substantial cash expenditures over the 22-year analysis period.
- Except as noted in the alternate productivity scenarios, crane production after implementation of the Master Plan CIP is assumed to increase by 6% to 43% from current levels, depending on the carrier group, to the following levels: CNMI 18 containers/hr., FSM/MI 20/hr., Asia 20/hr., and USWC 25/hr.
- The DOD surcharge scenarios assume a 33% capture rate for military cargo, because it is unlikely that all DOD cargo can be identified through routine documentation that could be entered into the Terminal Operating System, such as manifests and bills of lading.
- Unfunded retirement costs are projected to continue through 2040 at the FY2007 level of $807,229 per year.
- COLA and supplemental annuity costs are projected to continue through 2040 at the estimated FY2008 level of $1,800,000 per year.
- The type and form of DOD construction cargo has not been effectively identified at this time. Certain construction material such as those needed for base modules could be constructed in Guam or

fabricated and shipped from offshore locations. The same could apply for items such as sand and aggregate. The extent and timing of cargo cannot be verified until the above facility design is completed and contracts awarded by DOD, FHWA and other agencies. The Master Plan provides the flexibility to handle the additional cargo if they materialize. However for the financial analysis it was assumed that conservative cargo levels similar to those outlined in the Master Plan Update 2007 report were considered. Any additional cargo will increase revenue but was not considered for the financial analyses.

## 5.3 General Findings

In all of the scenarios, the following dynamics are evident regarding PAG's future operating finances:

- As a result of the DOD buildup, volumes are projected to increase dramatically from 2010 to 2016. Container volumes are projected to increase as much as 75% and breakbulk volumes are projected to increase as much as 125%. After the DOD construction buildup, container volumes will remain at least 50% higher compared with 2007.
- Consequently, revenues from cargo operations are projected to increase rapidly, especially during the DOD buildup. Because revenues are based directly on volumes, annual operating revenues are projected to almost double over 2007 in the peak year (2015) based on volume alone (without tariff increases or surcharges).
- At the same time, because of the higher productivity and efficiencies created by the proposed new terminal, direct operating expenses for cargo operations are projected to increase at a slower rate – 38% over 2007 at the peak without labor and non-labor cost escalations, and 90% with annual cost escalations.
- The combined result is that unencumbered cash flow available for maintenance/replacement capital and Master Plan CIP bond/loan payments is expected to more than triple during the buildup without the benefit of any tariff increases and after cost escalations. With relatively modest tariff increases, cash flow could quintuple at the peak and triple in the out years. It is noted that these are temporary in nature and cargo volumes will decline in the out years with less associated revenue.
- Of all the variables tested in the scenario analysis below, it is clear that the feasibility of financing any significant portion of the Master Plan CIP is most sensitive to future tariff pricing policy. Without annual tariff increases at some level, a major borrowing is not likely feasible. In order to support a revenue bond issue, annual tariff increases are likely needed.
- Future financial results were also found to be highly sensitive to the rate of labor, non-labor and capital cost escalation.
- The concept of a DOD wharfage surcharge appears to be difficult to implement and of much less value compared to tariff increases, unless the surcharge is at a very high level. It appears that even a 100% wharfage surcharge on its own would not support a bond financing. The feasibility of a fully effective DOD surcharge is also questionable from an implementation standpoint, because it may not be possible to identify and assess much of the DOD cargo. This would be especially true of cargo generated by DOD contractors, subcontractors other firms importing material to support the DOD expansion.
- The recommended preventive maintenance program and replacement capital program has a significant impact on financial performance and PAG's borrowing capacity because it requires substantial cash expenditures over the 20-year analysis period, thus reducing the cash flow available for bond/loan payments.

## 5.4 Preliminary Financial Scenario Analysis

The purpose of the preliminary financial scenario analysis was to test the sensitivities of PAG's finances to a variety of future variables such as productivity levels, pricing strategy, staffing levels and financing terms so that PAG managers and policy makers could gain a qualitative and quantitative sense of potential future policy options. The preliminary analysis provided managers and policy makers with a "menu" of potential management actions, which they could build into policy options for broader discussion.

### 5.4.1 Preliminary Scenarios

Twenty preliminary scenario variations were assessed using the model described in Section 4. These included:

- Existing conditions scenario – 1
- Pricing scenarios – 6
- Crane productivity scenarios – 3
- Staffing scenarios – 4
- Combination pricing & staffing scenario – 1
- Financing scenarios – 4
- PMC operation scenario – 1
- No DOD scenario – 1

The preliminary scenario results pointed to a likely realistic borrowing capacity for PAG of $35 million to about $70 million. A Base Case scenario was defined as that which included sufficient tariff increases over time to maintain a positive cash flow after maintenance and replacement capital expenditures – hence a positive cash flow available for debt service. Annual tariff increases averaging[14] about 2.30% were found to be necessary to maintain such a cash flow, or about half of the prevailing CPI inflation rate projected for Guam. This scenario indicated an approximate borrowing capacity of $44 million with a coverage ratio of 1.6.

A spreadsheet showing the various financial and operational input parameters, financial performance indicators and approximate borrowing capacity associated with each preliminary scenario is presented in Appendix 5 along with a discussion of each.

### 5.4.2 Changes to Preliminary Model & Assumptions

Based on the review of the preliminary model and analysis with PAG staff and policy discussions with the PAG management and board, a number of changes were made in the financial analysis model and assumptions. Key changes to the model and assumptions include:

- The application of a few tariff rates was corrected, most notably the transshipment discounts
- Labor cost escalation was increased from 3.0% to 3.5% annually
- Stevedoring, terminal and transportation division manning was modified based on a review by PAG operations and discussions to address future efficiencies.
- The Master Plan CIP drawdown schedule was updated to reflect current "best estimate" assumptions on crane procurement.
- The estimated interest rate on the bonds/loan was increased from 5.0% to 5.5%
- A separate, lower tariff escalation factor was established for transshipment throughput and wharfage, given the competitive and price-sensitive nature of these discretionary cargoes

[14] For the purpose of reflecting the results in the analyses the tariff increases could be based either on a three to five year cycle or on an annual basis as long as the financially weighted average rates are sustained.

- The tariff escalation factor was applied to several miscellaneous tariff revenue sources that were not escalated in the preliminary analysis
- PAG's non-tariff revenues (e.g., petroleum pipelines, leases, marinas) were escalated 1.0% annually or based on specific assumptions provided by staff; there was no escalation on these revenue sources in the preliminary analysis
- Other scenario-specific changes were made for the refined scenarios

These changes are reflected in the refined scenarios in Section 5.5 and are not reflected in the preliminary scenarios in Appendix 5.

### 5.4.3 GEDCA and BOFA Detailed Financing Analyses

GEDCA is the Gov Guam agency that is responsible for securing bond financing for all Government of Guam institutions including PAG. GEDCA has contracted with Banc of America Securities, LLC (BOFA) to provide advice and analyses on revenue bond financing initiatives for the Government of Guam.

PBI worked with GEDCA and BOFA through the study to obtain input and advice on revenue bond options for PAG. In order to obtain a benchmark as close as is feasible to current market conditions for bond financing for PAG, PBI provided GEDCA/BOFA the revenue and expense projections and other output from the model for the Base Case scenario discussed in Section 5.5. BOFA on behalf of GEDCA performed a detailed pro-forma revenue bond issue debt service analysis. The details of this pro-forma analysis are included in Appendix 6.

## 5.5 Refined Financial Scenario Analysis

After presentation of the preliminary analysis by PBI and review by PAG, the PAG board selected five scenarios for further refinement and analysis, including:

- Base Case
- Base Case + Military Surcharge
- Base Case + Military Surcharge & Staffing Reduction
- Base Case + PMC for Maintenance
- PMC for Cargo Operations

The refined scenarios are each discussed below along with the No DOD Buildup scenario. The results of the scenarios are summarized in Table 5.5-1.

**Financing Assumptions**

To develop the financing assumptions used to estimate PAG's borrowing capacity for the Master Plan CIP Project under the alternate scenarios, PBI worked with GEDCA and its financial advisor (BOFA), other bond underwriters, and the USDA.

For a number of reasons, it is appropriate to use conservative assumptions regarding the financing terms. Most importantly, PAG has not issued revenue bonds or made a major borrowing before. Furthermore, the financials upon which the borrowing would be based are projected cash flows that are several times higher than PAG's actual historic cash flows. Based on experience with bond issues by the Guam Power Authority, Guam Waterworks Authority and Guam International Airport Authority, BOFA estimates that an inaugural PAG bond issue could be rated BBB-, which is at the low end of investment grade. While the bond underwriters (and banks, in the case of the USDA guarantee program) typically require a debt service coverage ratio of 1.25 by covenant, these authorities, as a matter of policy, base their pricing and cash flows on a coverage ratio of 1.6 (airport) to 1.75 (GPA/GWA) in order to provide a margin to better ensure that their cash flows will be sufficiently robust to ensure repayment. The higher coverage ratio also helps provide an additional margin of comfort to potential bond holders.

Based on the above, the following financing terms are assumed:

- 20-year borrowing to 2030
- 5.5% interest rate
- Debt service coverage ratio

- Assumed PAG policy position – 1.6
- More conservative policy – 2.0

It should be noted that the study model is structured to provide only an estimate of the net proceeds of the bond/loan available to the Master Plan CIP Project under the alternate scenarios. It does not break out detailed financing related line items such as reserve fund, capitalized interest fund and closing costs. Typical estimates of such financing costs and the full par value for the Base Case Scenario A for a maximum borrowing capacity with a coverage ratio of 1.25 are provided in the BOFA pro-forma analysis included in Appendix 6.

# Table 5.5-1 Summary of Financial Analysis Scenarios & Borrowing Capacities

## PAG Masterplan CIP Financial Feasibility Study

| | A Adjust Tariff (Base Case) | B Adjust Tariff + DOD Surcharge | C Adjust Tariff + DOD Surcharge + Adjust Staffing | D Adjust Tariff + PMC Maintenance | E Adjust Tariff + PMC Term. Operation |
|---|---|---|---|---|---|
| **CARGO FORECAST** | Likely/Median | Likely/Median | Likely/Median | Likely/Median | Likely/Median |
| **PRICING VARIABLES** | | | | | |
| Tariff Rate Escalation - Transhipment | 1.25% | 1.25% | 1.25% | 1.25% | 1.25% |
| Tariff Rate Escalation - Thruput & Operations | **2.30%** | 2.30% | 2.30% | 2.30% | **2.00%** |
| Tariff Rate Escalation - Wharfage & Dockage | **2.30%** | 2.30% | 2.30% | 2.30% | 2.30% |
| Non-Tariff Revenue Escalation | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% |
| Military Wharfage Surcharge - Containers | $ - | **$ 100** | **$ 100** | $ - | $ - |
| Military Wharfage Surcharge - Breakbulk | $ - | **$ 4** | **$ 4** | $ - | $ - |
| Military Cargo Capture Rate | 0% | **33%** | **33%** | 0% | 0% |
| **ECONOMIC VARIABLES** | | | | | |
| Labor Cost Escalation | 3.50% | 3.50% | 3.50% | 3.50% | 3.50% |
| Non-Labor Cost Escalation | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% |
| Capital Cost Escalation | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% |
| **OPERATING VARIABLES** | | | | | |
| Crane Productivity - CNMI Carriers | 18 | 18 | 18 | 18 | **20** |
| Crane Productivity - FSM/MI Carriers | 18 | 18 | 18 | 18 | **20** |
| Crane Productivity - Asia Carriers | 20 | 20 | 20 | 20 | **22** |
| Crane Productivity - USWC Carriers | 25 | 25 | 25 | 25 | **27** |
| Equipment Maintenance Staffing Reduction | 0 | 0 | **5** | **8** | **5** |
| Facility Maintenance Staffing Reduction | 0 | 0 | **3** | **4** | 0 |
| Administrative Staffing Reduction | 0 | 0 | **8** | **2** | **14** |
| Terminal Security Staffing Reduction | 0 | 0 | 0 | 0 | **6** |
| **FINANCIAL VARIABLES** | | | | | |
| Discount Rate | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% |
| Coverage Ratio - Revenue Bonds | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Coverage Ratio - USDA Guaranteed Loan | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| Bond/Loan Interest Rate | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% |
| Bond/Loan Term | 20 | 20 | 20 | 20 | 20 |
| **MODEL RESULTS** | | | | | |
| Net Cash Flow in 2030 (After Maintenance/Replacement Capital) | $ 21,743 | $ 1,739,811 | $ 3,455,370 | $ (276,691) | $ 2,620,365 |
| Internal Rate of Return (IRR) | -10.10% | -5.41% | -3.24% | negative | -8.37% |
| Net Present Value (NPV) | $ (117,405,089) | $ (92,554,005) | $ (81,091,273) | $ (110,552,886) | $ (116,732,220) |
| **Revenue Bonds** | | | | | |
| Estimated Maximum PAG Borrowing Capacity* | $ 35,480,581 | $ 48,138,003 | $ 54,517,157 | $ 34,281,020 | $ 24,302,637 |
| PMC Capital Contribution (PV) | n/a | n/a | n/a | $ 8,100,000 | $ 25,100,000 |
| **PAG Borrowing Capacity + PMC Capital Contribution** | **$ 35,480,581** | **$ 48,138,003** | **$ 54,517,157** | **$ 42,381,020** | **$ 49,402,637** |
| Estimated Bond/Loan Payment** | $ (2,814,210) | $ (3,818,157) | $ (4,324,132) | $ (2,719,064) | $ (1,927,610) |
| **USDA Guaranteed Loan** | | | | | |
| Estimated Maximum PAG Borrowing Capacity* | $ 44,350,726 | $ 60,172,504 | $ 68,146,446 | $ 42,851,275 | $ 30,378,296 |
| PMC Capital Contribution (PV) | n/a | n/a | n/a | $ 8,100,000 | $ 25,100,000 |
| **PAG Borrowing Capacity + PMC Capital Contribution** | **$ 44,350,726** | **$ 60,172,504** | **$ 68,146,446** | **$ 50,951,275** | **$ 55,478,296** |
| Estimated Bond/Loan Payment** | $ (3,517,762) | $ (4,772,696) | $ (5,405,165) | $ (3,796,827) | $ (2,409,512) |
| **PRESENT VALUE OF CAPITAL OUTLAYS** | | | | | |
| Master Plan CIP capital + downstream replacement of CIP capital*** | $ 265,788,596 | $ 265,788,596 | $ 265,788,596 | $ 265,788,596 | $ 265,788,596 |
| Maintenance/replacement capital without DOD buildup & Master Plan CIP | $ 126,224,706 | $ 126,224,706 | $ 126,224,706 | $ 126,224,706 | $ 126,224,706 |
| **Difference caused by DOD buildup and Master Plan CIP** | **$ 139,563,890** | **$ 139,563,890** | **$ 139,563,890** | **$ 139,563,890** | **$ 139,563,890** |

*This is an approximation only. GEDCA's financial advisor Bank of America has performed a complete revenue bond analysis including estimates of capitalized interest, interest earned, reserve requirements, bond fees, closing costs, etc.

**Assumes level payments. A front-loaded payment structure may be preferable.

***Includes the PMC's capital contribution, in the case of Scenarios D & E.

### 5.5.1 Scenario A – Base Case

**Description**

Issuing revenue bonds or securing a USDA guaranteed loan will require that PAG maintain sufficient cash flow coverage and reserves over and above its debt service payments such that the bondholders or lenders are assured PAG can make its bond/loan payments while also addressing unforeseen financial requirements. This will require that PAG review its finances annually and make adjustments to costs or pricing to ensure that these coverage obligations are met. In some years revenues will need to be increased and tariff adjustments will be needed. These tariff adjustments can be designed and applied so as to minimize the impact on price sensitive cargoes and the economy of Guam. In other years price increases may not be needed to maintain coverage requirements. In any event, it is anticipated that the bondholders and lenders will require that PAG have the authority to make such pricing adjustments at an operational level independent of the legislative process.

The Base Case identifies the minimum level of average annual tariff rate escalations that would likely be required through 2030 to maintain a positive cash flow available for debt service (cash flow after maintenance/replacement capital expenditures). The financial modeling found that across-the-board tariff adjustments of approximately 2.3% annually (1.25% on transshipments) would likely be required to maintain a positive cash flow available for debt service. The required coverage requirement was then applied to this cash flow and the resulting borrowing capacity was calculated. Crane productivity rates that are 6% to 43% higher than at present are assumed, based on the new cranes, terminal equipment and computerized operating system included in the Master Plan. The Base Case also assumes existing PAG staffing levels (See FTE Schedule for Scenario A, Figure A4-3 in Appendix 4). Other assumptions are discussed in Section 5.2 above.

**Approximate Borrowing Capacity**

Based on PBI's financial modeling analysis, PAG's approximate borrowing capacity, in terms of net bond/loan proceeds available for construction, under the Base Case is estimated to be approximately $44 million:

| Policy Basis | Coverage Ratio | Approximate PAG Borrowing Capacity* | Annual Bond/Loan Payment |
|---|---|---|---|
| BOFA Scenario | 1.25 | $54.5 million | $4.8 million** |
| Assumed PAG Policy | 1.6 | $44 million | $3.5 million*** |
| More Conservative Policy | 2.0 | $35 million | $2.8 million*** |

*Proceeds available for construction. Reserve & capitalized interest funds and closing costs excluded.
**Average annual payment; front-loaded payment structure.
***Assumes level payments.

**BOFA Revenue Bond Pro-forma**

In order to validate and refine the above estimate of borrowing capacity, GEDCA's financial advisor, Banc of America Securities, LLC, provided a revenue bond pro-forma based on the cash flows after maintenance/replacement capital for the Base Case Scenario (see Appendix 6). Their analysis validated the above estimates with key financing related adjustments:

- The BOFA pro-forma was based on the 1.25 coverage ratio required by covenant rather than 1.6, which incorporates the additional comfort factor assumed to be included by PAG policy. Consequently, their pro-forma indicates a borrowing capacity, in terms of net bond proceeds available for construction, of $54.5 million compared with $44 million in the PBI analysis above. When adjusted for the difference in coverage ratio, the two methods produce very similar results for the net bond proceeds available for the Master Plan CIP Project.

- In addition to the estimated proceeds available for construction, the maximum borrowing capacity calculated in the BOFA pro-forma shown in Appendix 6, includes approximately $10.5 million in additional borrowing to cover $9.5 million for the Reserve Fund and Capitalized Interest Fund and over $1 million for the Cost of Issuance and Underwriter's Discount. Hence the BOFA pro-forma is based on a par amount of $65 million. The additional borrowing to cover these requirements does not have a significant impact on the resulting borrowing capacity, in terms of net proceeds available for construction, because of the off-setting interest earned on the two funds and the way they are used in the bond structure.

### 5.5.2 Scenario B – Base Case + Military Surcharge

**Description**

The Military Surcharge Scenario assumes an approximately 100% wharfage surcharge on all DOD construction and on-going military base traffic to 2030 (including existing DOD cargo) – $100/container and $4.00/revenue ton on breakbulk cargo – in addition to the tariff rate escalation factors in the Base Case above. Because of the complexities in identifying all military cargo, however, this scenario assumes that only 33% of the forecasted military cargo is assessed with the surcharge. Note that this surcharge is not a substitute for the Federal Funding and Grants discussed for this and other scenarios but is a surcharge applicable to military cargo directly and paid for by the military. The scenario results in significantly higher cash flows available for debt service than in the Base Case alone.

**Approximate Borrowing Capacity**

Based on PBI's financial modeling analysis, PAG's approximate borrowing capacity under the Base Case + Military Surcharge scenario is estimated to be approximately $60 million:

| Policy Basis | Coverage Ratio | Approximate PAG Borrowing Capacity* | Annual Bond/Loan Payment** |
|---|---|---|---|
| Assumed PAG Policy | 1.6 | $60 million | $4.8 million |
| More Conservative Policy | 2.0 | $48 million | $3.8 million |

* Proceeds available for construction. Reserve & capitalized interest funds and closing costs excluded.
**Assumes level payments.

### 5.5.3 Scenario C – Base Case + Military Surcharge & Staffing Reduction

**Description**

This scenario tests the results of a combination of management actions in pricing and staffing. It assumes the 2.3% minimum tariff escalation (1.25% on transshipments), the approximately 100% DOD wharfage surcharge (on 33% of the military cargo) and 10% staffing reductions in equipment maintenance, facility maintenance and administration in 2012. Note that this surcharge is not a substitute for the Federal Funding and Grants discussed for this and other scenarios but is a surcharge applicable to military cargo directly and paid for by the military. The potential feasibility of staffing reductions (16 positions) is based on the following rationale:

- With all new equipment after completion of the Master Plan CIP program, the equipment maintenance function will focus more on preventive maintenance rather than repairs and equipment maintenance requirements may be reduced. While overall equipment maintenance staffing will increase with more equipment, increased cargo volume and increased equipment use, the scenario includes a one-time 10% reduction in equipment maintenance staffing (approximately 5 positions).
- Likewise, with newly built and refurbished facilities, it is assumed that facility maintenance can focus more on preventive maintenance and a one-time 10% reduction in facility maintenance staffing may be feasible (approximately 3 positions).
- With a new integrated Terminal Operating System after completion of the Master Plan CIP, administrative support for data entry, data analysis, accounting, billing, and other administrative

functions will be reduced. Hence, the scenario includes a one-time 10% reduction in administrative staffing[15] (approximately 8 positions).

**Approximate Borrowing Capacity**

Based on PBI's financial modeling analysis, PAG's approximate borrowing capacity under the Base Case + Military Surcharge & Staffing Reduction scenario is estimated to be approximately $68 million:

| Policy Basis | Coverage Ratio | Approximate PAG Borrowing Capacity* | Annual Bond/Loan Payment** |
|---|---|---|---|
| Assumed PAG Policy | 1.6 | $68 million | $5.4 million |
| More Conservative Policy | 2.0 | $55 million | $4.3 million |

* Proceeds available for construction. Reserve & capitalized interest funds and closing costs excluded.
**Assumes level payments.

### 5.5.4 Scenario D – Base Case + PMC for Maintenance

**Description**

This scenario is modeled on the current request for proposals (RFP) that PAG has drafted for a PMC to perform maintenance and related procurement functions. Under this scenario, the PMC would manage all equipment maintenance, facility maintenance and procurement beginning in 2009 and have the option to acquire and lease to PAG certain capital improvement items.

It is difficult to predict how bidders would structure their proposed operations under this RFP; however, for purposes of this analysis, it was assumed that the PMC would reduce facility and equipment maintenance staffing by about 12 positions and procurement staffing by 2 positions as a result of increased efficiencies. The PMC costs paid by PAG include a $500,000/year management fee/overhead cost to account for the PMC's on-site personnel, allocated corporate overhead and profit.

Under the PMC maintenance RFP, the PMC would have the option to participate in capital purchases for PAG, but it is not obligated to do so. For purposes of this scenario, it was assumed that the PMC would assume a very aggressive stance with respect to capital participation by acquiring and leasing to PAG all terminal equipment for the Master Plan CIP ($8.1 million, 2008 dollars) and all downstream equipment replacements ($19.6 million, 2008 dollars).

In calculating equipment lease rates to PAG, it is assumed the PMC would use borrowed funds to finance the equipment purchases and charge the prime rate plus a 5 percentage point margin to account for the PMC's taxes, profit, and potentially its subprime status. Based on a historic prime rate of 7% (1990 to 2007), an interest rate of 12% is assumed in computing the equipment lease rates to PAG. In 2030, PAG would have lease obligations continuing through 2049 so the 2030 value of these lease obligations ($28.5 million) is included as a one-time cost to PAG in 2030. The residual value of the equipment to the PMC at the end of the lease term is assumed to be offset by the cost of transporting and re-marketing it elsewhere. The same pricing assumptions as in the Base Case are assumed.

**Approximate Borrowing Capacity – With PMC Capital Participation**

Based on PBI's financial modeling analysis, PAG's approximate borrowing capacity under the PMC maintenance scenario is estimated to be $43 million:

[15] *Administrative (7601-7613) excluding General Manager's office, Harbor Master's office and Port Police.*

| Policy Basis | Coverage Ratio | Approximate Borrowing Capacity* | Annual Bond/Loan Payment** |
|---|---|---|---|
| Assumed PAG Policy | 1.6 | $43 million | $3.8 million |
| More Conservative Policy | 2.0 | $34 million | $2.7 million |

** Proceeds available for construction. Reserve & capitalized interest funds and closing costs excluded.
**Assumes level payments.

The combination of the PMC's $8.1 million capital contribution and PAG's borrowing capacity results in a total capital contribution of approximately $51 million:

| Policy Basis | PMC Capital Contribution | Approximate PAG Borrowing Capacity* | Total Capital Contribution |
|---|---|---|---|
| Assumed PAG Policy | $8 million | $43 million | $51 million |
| More Conservative Policy | $8 million | $34 million | $42 million |

* Proceeds available for construction. Reserve & capitalized interest funds and closing costs excluded.

**Approximate Borrowing Capacity – Without PMC Capital Participation**

As stated earlier, the PMC would have the option to participate in capital purchases for PAG, but it is not obligated to do so. If the PMC were to opt out of all capital participation, PAG's approximate borrowing capacity would be approximately $48 million:

| Policy Basis | Coverage Ratio | Approximate Borrowing Capacity* | Annual Bond/Loan Payment** |
|---|---|---|---|
| Assumed PAG Policy | 1.6 | $48 million | $3.8 million |
| More Conservative Policy | 2.0 | $38 million | $3.0 million |

*Proceeds available for construction. Reserve & capitalized interest funds and closing costs excluded.
**Assumes level payments.

## 5.5.5 Scenario E – PMC for Cargo Operations

**Description**

This PMC scenario assumes that a private terminal operator performs all cargo operations, crane and equipment maintenance, and terminal security beginning in 2010. Under this scenario, PAG assumes a more traditional landlord port role, including' facility maintenance, management of leased properties and marina, harbor master functions, and port police. It results in about 25 less staff positions than those shown for Scenario A, in Figure A4-3, resulting in cost savings of about $1.3 million per year (2008 dollars). It is also assumed that the private operator achieves crane productivity levels that are 2 containers per hour higher for all carriers. The PMC costs include a $500,000/year management fee/overhead cost to account for the PMC's on-site personnel and allocated corporate overhead.

From a pricing standpoint, this scenario assumes that the PMC controls all throughput and operational pricing and PAG controls wharfage and dockage pricing. Escalation at 2.3% annually on wharfage and dockage by PAG is assumed as in the Base Case, and 2.0% escalation of throughput and operational rates by the PMC is assumed. As in the Base Case, escalation of transshipment rates (including wharfage and throughput) is assumed to be 1.25% annually, due to the price sensitive and discretionary nature of this cargo.

Financially, the scenario assumes that the PMC provides $25.1 million (2008 dollars) towards the Master Plan CIP capital requirement for the cranes, terminal equipment and terminal operating system plus the downstream replacement capital for the cranes and equipment. It assumes the operator finances the investments out of equity and operating revenues at a target 25% pre-tax internal rate of return. In the final year, PAG purchases the PMC's equipment at its depreciated book value.
As payment to PAG, the PMC is able to pass all wharfage and dockage revenues to PAG and pay PAG a percentage of gross operating revenues (other than wharfage and dockage) as a license fee. The license

fee should also be subject to a specified minimum annual guarantee amount to PAG. It is assumed that the PMC operates over the entire term to 2030 and that the percentage of gross revenue ranges from 16% in the first 5 years of operation to 24% in the second 5 years and 16% in the out years. This skewed distribution is to better ensure that PAG participates in higher revenues in peak years per the cargo forecast.

- Wharfage and dockage revenues to PAG starting at $6 million/year, rising to $13 million in 2030 with volume increases and tariff escalations
- License fee revenues to PAG of $4-$6 million/year in the first five years, $9-$10 million/year during peak DOD volumes, and $5-$10 million/year in the out years
- A positive net income after depreciation to the PMC throughout the period to 2030
- A 25% internal rate of return to the PMC over the first five years with slightly higher returns on a 10- or 20-year basis. If the PMC contributes more capital the internal rate of return for the PMC is lower. For example if the PMC provides an investment of $32.8 Million instead of the $28.1 Million assumed above the rate of return to the PMC will be approximately 19%.
- It was assumed that employees, except for PMC corporate employees would continue to work with government rates and benefits but work at the direction of the PMC. Retirement and other costs were assumed to be those for the other Scenarios.

**Approximate Borrowing Capacity**

Based on PBI's financial modeling analysis, PAG's approximate borrowing capacity under the PMC for Cargo Operations scenario is estimated to be approximately $30 million:

| Policy Basis | Coverage Ratio | Approximate PAG Borrowing Capacity* | Annual Bond/Loan Payment** |
|---|---|---|---|
| Assumed PAG Policy | 1.6 | $30 million | $2.4 million |
| More Conservative Policy | 2.0 | $24 million | $1.9 million |

*Proceeds available for construction. Reserve & capitalized interest funds and closing costs excluded.
**Assumes level payments.

The combination of the PMC's $25 million capital contribution and PAG's borrowing capacity results in a total capital contribution of approximately $55 million:

| Policy Basis | PMC Capital Contribution | Approximate PAG Borrowing Capacity* | Total Capital Contribution |
|---|---|---|---|
| Assumed PAG Policy | $25 million | $30 million | $55 million |
| More Conservative Policy | $25 million | $24 million | $49 million |

*Proceeds available for construction. Reserve & capitalized interest funds and closing costs excluded.

## 5.5.6 No DOD Buildup

The No DOD Buildup scenario assumes that no U.S. Marine base relocation and DOD buildup occur. Consequently, the cargo forecast for PAG would be much lower, particularly for the next eight years, and a deferred/reduced capital improvement program could be undertaken by PAG.

**No DOD CIP Program**

The main differences between the Master Plan CIP program and the deferred/reduced No DOD Buildup CIP program are:

- Facility repairs and equipment repair/replacement would continue at a higher rate in the form of annual maintenance/replacement capital expenditures
- Berth F7 would not be needed

- One refurbished crane would be acquired in 2009; additional cranes would not be needed based on lower volumes
- All terminal equipment purchases would be handled as a part of the maintenance/replacement capital program
- An approximately $112 million CIP program would be undertaken in 2017 to 2020, including:
  - Refurbishment of F2, F3 ($16 million)
  - Replacement of the Subic crane ($4.5 million)
  - Master Plan CIP projects (F-4, F-5, F-6 and associated facilities) with a reduced scope ($91 million)
- The scope of the $91 million in Master Plan CIP projects included above was reduced for the No DOD case, based on the following priority system:
  - Mandated projects based on compliance with legal and permitting requirements, safety issues, and contractual obligations
  - Maintenance projects required to address facilities with critical physical condition issues
  - Projects involving the potential for the highest financial return based on reduced operating costs and efficiencies

### Cost Differential Between No DOD Buildup Scenario & Master Plan CIP

Table 5.5-1 compares the present value of all capital outlays required from 2009 to 2030 under the Master Plan CIP scenario and the No DOD Buildup scenario. The comparison includes both the CIP projects and the required maintenance/replacement capital expenditures over the 22-year period. The present value of these capital outlays (discounted at 5.5%) is used to account for the significant timing differences between the two scenarios by expressing the value of each in today's dollars.

**Table 5.5-1 Capital Outlays for Master Plan CIP & No DOD Buildup Comparison**

| PRESENT VALUE OF CIP & MAINTENANCE REPLACEMENT CAPITAL OUTLAYS 2009-2030 | | |
|---|---|---|
| **MASTER PLAN CIP** | **NO DOD BUILDUP** | **DIFFERENCE ATTRIBUTABLE TO DOD BUILDUP** |
| $266 million | $126 million | $140 million |

The present value of capital outlays under the Master Plan CIP scenario is estimated to be $266 million compared with $126 million under the No DOD scenario, with a difference of $140 million. The cost differential between these two cases is very important as a measure of the impact of the DOD buildup on PAG's capital program over the next 22 years. In the absence of the DOD buildup, PAG would have to spend $140 million less in today's dollars on capital programs and maintenance/replacement capital than is the case under the DOD buildup which necessitates the Master Plan CIP.

### Financial Analysis

Financing the No DOD Buildup scenario requires a different set of assumptions than the Base Case and other Master Plan scenarios above. Volumes are much lower under the No-DOD scenario and cost-saving productivity improvements in a programmatic fashion as needed with lower levels of equipment but including terminal operating systems. Consequently, revenues and cash flow available for maintenance/replacement capital are lower as well.

The financial analysis finds that tariff escalation of approximately 2.9% annually would be required to fund maintenance/replacement capital while maintaining PAG's working capital (cash) balance at its current level through 2017, when the $112 million No DOD CIP program would be needed. At that point,

financing or funding the deferred No DOD CIP program would become an issue, with options for financing/funding it including:

- Higher tariff escalation between 2008 and 2017 to build up working capital balances in advance of the CIP. PAG's working capital balance in 2017 would be approximately $32 million with tariff escalation of 4.8% annually, which is equivalent to the projected Guam CPI.
- A revenue bond, USDA guaranteed loan or other borrowing in 2017 based on PAG's calculated borrowing capacity at that time.
- Funding of improvements through Federal grant sources.

### 5.5.7 Matson/Horizon Crane Proposal

PBI also reviewed the Matson Horizon License Agreement with the Port. While the proposal provided a general outline of the arrangements for supply, installation and utilization of three cranes at the Port the document did not include specific financial rates and conditions under which the cranes would be utilized except license fees of $23,596 to be paid monthly to the Port. At the time of completion of this study the initiative for Matson/Horizon to furnish the cranes was in litigation. There was no specific financial detail available from PAG or Matson Horizon that could be included in the analysis.

## 5.6 Economic Impact of Port Tariffs

This section briefly summarizes the impacts of proposed tariff increases at the Port of Guam on the price of retail products in Guam. To put the tariff changes at the port of Guam in perspective, it is useful to note that the PAG tariffs account for less than 10% of the total transportation cost for a typical 40-foot container from California to Guam. Representative total transportation costs for a round trip container between California and Guam are shown below:

| | | |
|---|---|---|
| Trucking in California | $300 | 5% |
| Port charges in California (load out & empty in) | $730 | 12% |
| Ocean freight charges California-Guam & empty return | $3,000 | 50% |
| Ocean freight fuel surcharges | $1,200 | 20% |
| Port charges in Guam (load in & empty out) | $565 | 9% |
| Trucking in Guam | $200 | 3% |
| Total | $5995 | 100% |

As this illustrates, the ocean freight charges and related fuel surcharges account for about 70% of the total transportation cost of a container from California while the current port charges at Guam amount to only about 9% of the total.

As shown in Table 5.6-1, the main PAG tariff items for a 40-foot dry container from the U.S. West Coast (handled by chassis at the port) totals $565; the same tariff items for a 20-foot dry container from Asia (grounded at the port) total $589. If these tariff rates were escalated 2.3% annually in accordance with the Base Case assumptions, the resulting in PAG tariff rates would be about $932 and $972, respectively, for USWC 40-foot and Asian 20-foot containers. The cumulative increase in Port tariff rates for USWC 40-foot container would be about $367 and the increase for a 20-foot container from Asia would be about $382.

**Table 5.6-1 Port Tariff Rates for Roundtrip Container to/from Guam Assuming Base Case Escalation to 2030**

| | 2008 Tariff Rates | | 2030 Tariff Rates* | | Cumulative Increase (2008-2030) | |
|---|---|---|---|---|---|---|
| Tariff Item | USWC 40' Chassis | Asia 20' Ground | USWC 40' Chassis | Asia 20' Ground | USWC 40' Chassis | Asia 20' Ground |

| | | | | | | |
|---|---|---|---|---|---|---|
| Throughput<br>Inbound load<br>Outbound empty | $185.00<br>$255.00 | $255.00<br>$255.00 | $305.10<br>$420.54 | $420.54<br>$420.54 | $285.64 | $331.08 |
| Wharfage<br>Inbound load<br>Outbound empty | $107.50<br>$3.50 | $62.60<br>$2.60 | $177.29<br>$5.77 | $103.24<br>$4.29 | $72.06 | $42.33 |
| Fuel Surcharge<br>Inbound load<br>Outbound empty | $6.00<br>$6.00 | $6.00<br>$6.00 | $9.89<br>$9.89 | $9.89<br>$9.89 | $7.78 | $7.78 |
| Security Fee | $2.00 | $2.00 | $3.30 | $3.30 | $1.30 | $1.30 |
| Total | $565.00 | $589.20 | $931.78 | $971.69 | $366.78 | $382.49 |

*Assumes 2.3% annual escalation per the Base Case.
Source: Port Authority of Guam Terminal Tariff and PBI analysis.

While a cost increase of $367 to $382 per container over 22 years may seem significant, a further examination of the cost per item typically shipped by container into Guam reveals that the increase to the cost of goods is modest. Table 5.6-2 shows the typical loadings in a 40-foot container for a sampling of typical retail items purchased in Guam.

**Table 5.6-2 Tariff Impact on Retail Costs**

| | Canned Beverage (12 oz. can) | Canned Spam (12 oz. can) | Lettuce (Head) | Rice (20-lb. bag) | Lumber (8 ft. 2x4) |
|---|---|---|---|---|---|
| Cumulative increase in tariff charges, 2008-2030 | $366.78 | $366.78 | $366.78 | $366.78 | $366.78 |
| Items per container | 51,744 | 49,032 | 24,000 | 2,280 | 3,550 |
| Cost increase per item (in future 2030 dollars) | 0.7¢ | 0.8¢ | 1.5¢ | 16.1¢ | 10.3¢ |
| Cost increase per item (in today's dollars)* | 0.3¢ | 0.3¢ | 0.5¢ | 5.7¢ | 3.7¢ |

*With projected CPI price inflation of 4.8% per year removed.
Source: Port of Guam Terminal Tariff, Matson Navigation, Hormel and PBI analysis.

A 40-foot container holds approximately 50,000 12-oz. cans of beverage or Spam, 24,000 heads of lettuce, over 2,000 20-lb. bags of rice or over 3,500 8-foot two-by-fours. When the cumulative 22-year cost increase associated with a 2.3% annual tariff escalation is spread over this many items in a container, the added cost per unit in 2030 will amount to a few pennies or a fraction of a penny per item in future 2030 dollars. In today's dollars, the future added cost would be even less as shown below:

| | Future 2030 Dollars | Today's Dollars |
|---|---|---|
| 12-oz canned beverage | 0.7¢ | 0.3¢ |
| 12-oz. can of Spam | 0.8¢ | 0.3¢ |
| 1 head of lettuce | 1.5¢ | 0.5¢ |
| 20-lb. bag of rice | 16.1¢ | 5.7¢ |
| 8-foot two-by-four | 10.3¢ | 3.7¢ |

# 5.7 Summary & Analysis

## 5.7.1 PAG Borrowing Capacity

PAG's estimated borrowing capacity under the five refined financial performance scenarios is summarized in Table 5.7-1 below along with the estimated capital contribution by a PMC under Scenarios D and E:

**Table 5.7-1 Summary of PAG Borrowing Capacity & PMC Capital Contribution**

| DEBT SERVICE COVERAGE POLICY & SCENARIO | PAG ESTIMATED BORROWING CAPACITY* | PMC ESTIMATED CAPITAL CONTRIBUTION | TOTAL PAG + PMC |
|---|---|---|---|
| **ASSUMED PAG POLICY (1.6 COVERAGE)** | | | |
| A. Base Case | $44,350,726 | n/a | $44,350,726 |
| B. Base Case + Military Surcharge | $60,172,504 | n/a | $60,172,504 |
| C. Base Case + Military Surcharge & Staffing Reduction | $68,146,446 | n/a | $68,146,446 |
| D. Base Case + PMC for Maintenance | $42,851,275 | $8,100,000 | $50,951,275 |
| E. PMC for Cargo Operation | $30,378,296 | $25,100,000 | $55,478,296 |
| **MORE CONSERVATIVE POLICY (2.0 COVERAGE)** | | | |
| A. Base Case | $35,480,581 | n/a | $35,480,581 |
| B. Base Case + Military Surcharge | $48,138,003 | n/a | $48,138,003 |
| C. Base Case + Military Surcharge & Staffing Reduction | $54,517,157 | n/a | $54,517,157 |
| D. Base Case + PMC for Maintenance | $34,281,020 | $8,100,000 | $42,381,020 |
| E. PMC for Cargo Operation | $24,302,637 | $25,100,000 | $49,402,637 |

*Proceeds available for construction.. Reserve & capitalized interest funds and closing costs excluded.

Under these scenarios, the combination of PAG's borrowing capacity and the PMC's capital contribution (where applicable) ranges from a low of $35 million under Scenario A (Base Case) with a more conservative policy on debt service coverage of 2.0 to a high of $68 million under Scenario C (Base Case + Military Surcharge & Staffing Reduction) with the assumed PAG coverage ratio policy of 1.6.

## 5.7.2 Feasibility of Scenarios

All of the refined scenarios studied represent feasible alternatives for PAG to raise capital for the Master Plan CIP program; however, some have a higher probability of achieving the estimated results than others and each involves a different type of risk. Scenarios D and E are dependent on the PAG finding a suitable PMC Contractor.

- The Base Case (Scenario A) involves actions that are most within PAG's control. Tariff pricing must be reviewed and adjusted annually or periodically to ensure that coverage requirements are maintained. While these actions should be reviewed by others, most likely including an industry advisory group, they should be free from direct customer and governmental influence.
- The military surcharge options (Scenarios B&C) further require that military cargo be identified as a part of routine terminal operations so that it can be assessed the appropriate surcharge. They also require that the military comply with the tariff. For these reasons, the military surcharge revenue included in these scenarios might be considered less certain than the regular tariff revenues, although this uncertainty could be mitigated through early negotiation with the military. To address these issues, the scenarios assume that only 33% of estimated military cargo is identified and successfully assessed a surcharge.

- The PMC maintenance option (Scenario D) can bring benefits to PAG in terms of maintenance efficiencies and streamlined procurement, and results in a net increase in capital contributed for the Master Plan CIP compared with the Base Case if the PMC opts to aggressively participate in capital acquisitions. Without financial participation in capital purchases by the PMC, the impact of this option of the Master Plan CIP and PAG's borrowing capacity is negligible.
- The PMC cases (Scenarios D&E) are subject to successful bidding and negotiation of contract terms with private companies. Once this negotiating process is concluded, the uncertainties associated with the contract terms in these scenarios will be reduced; however, uncertainties will remain and achieving the estimated financial results will depend on the performance of others.
- The PMC Scenarios D and E both address the current onerous process faced by PAG for replacement of equipment and facilities due to current procurement rules.
- Interestingly, the scenario that potentially produces the greatest borrowing capacity for PAG (Scenario C) is the one involving the most assertive set of management actions by PAG, without involving a PMC. Scenario C suggests that PAG could achieve its best financial results in its operations, if it could implement Base Case tariff increases, a military surcharge, improve operating efficiencies and reduce staffing where warranted by the new efficiencies of a modernized port.

### 5.7.3 Key Issues

The key issues associated with the financial performance scenarios include:

- Borrowing risk – All of the scenarios assume that PAG takes on a long-term borrowing that will require diligent management over a 20-year period. PAG has always assumed the operating and market risks associated with productivity, operating costs and pricing, but the margin for error will be reduced and the consequences of lower-than-expected results will increase when a long-term borrowing is included.
- Tariff pricing – The analysis finds that future financial performance for PAG is extremely sensitive to PAG's tariff pricing actions. Labor costs and non-labor expenses will be subject to continued inflation. Productivity improvements will help control costs but it is evident that PAG's tariff pricing must be adjusted over time. The projected minimum need for tariff adjustment is less than half of the projected rate of inflation in Guam and, as demonstrated in Section 5.6, the impact on retail prices in Guam is modest.
- Non-tariff pricing – Non-tariff pricing also affects future financial results, but much less than tariff rates. This includes leases, space rentals and marinas. The analysis found that many leases and rentals do not include automatic rent escalations. The financial analysis assumes an average annual increase of 1%, based on periodic property appraisals, lease escalations and other pricing adjustments.
- Military surcharge – Many issues surround the concept of assessing a special military surcharge to help finance improvements. Identifying military cargoes and assessing surcharges as a part of normal port operations will be challenging and the military's willingness to assist in or comply with a surcharge has not been established. Detailed discussions with the military will be needed in conjunction with refining a military surcharge strategy.
- Productivity and variable workforce – New cranes, new terminal equipment, semi-automated gates and a new computerized terminal operating system will result in higher vessel productivity and lower operating costs per container. The financial analysis assumes productivity increases of up to 43% in terms of containers per hour, which should be readily achievable based on industry standards. The analysis also assumes a variable workforce level for vessel operations as volumes peak during the DOD buildup and then decline. This will require that PAG use its authority to hire temporary workers and effectively manage them to meet the variable demand levels expected on a year-to-year and day-to-day basis in the future.

- Staffing – The efficiencies created by new facilities, new equipment and a terminal operating system will also create the potential to manage staffing levels in the maintenance and administrative areas. Some scenarios include potential staffing adjustments to address this. Any adjustment of staffing levels will take place in the context of increased overall employment at the port and attrition within the workforce as older workers retire. Nonetheless, this issue will require careful management.
- PMC approach – Two significantly different approaches are included in the analysis for increasing efficiency and attracting private capital using the PMC concept. One approach could attract a significant capital contribution by leveraging cargo operations and much of PAG's revenue stream under the management of a PMC operator; the other allows PAG to maintain operating control but has limited benefits in attracting private capital by outsourcing maintenance and procurement. The choice is a major policy decision for PAG requiring careful consideration.

# Section 6 Financing Framework Considerations

This section presents key information and findings developed as a result of the Financial Feasibility Study analyses in the previous section for consideration by the Port when choosing a framework for structuring the funding and financing needed to implement the Master Plan 2007 Update Capital Improvement Program (Master Plan CIP). It offers alternate conceptual approaches with different perspectives for selecting a financing and funding framework, including the following.

- Overview & Financing Program Drivers
- Opportunities & Constraints for Master Plan CIP Capital
- Contribution Approach for Assessing Extent of Funding
- Risks & Return Related to PAG Financing
- Other Miscellaneous Considerations for Capital Framework

## 6.1 Overview of Funding/Financing Program Drivers

### 6.1.1 Dependency of DOD Capital Program on Port

In order to have a sense of perspective on what is at stake and the key role that the Port will have to undertake in making the proposed military relocation program a success; it is beneficial to review the capital expenditures that the military has budgeted for its bases in Guam between 2007 and 2015. The budget for all Army, Navy, medical, Air Force and Marine relocation expenses and facilities is budgeted to be about $12.5 Billion. Of this only about $630 Million is budgeted for Fiscal Years 2007 and 2008.

**Table 6.1-1 DOD Expenditures for Base Relocation to Guam (2007 through 2015)**

| DOD Department | Total Expenditure in $Millions |
|---|---|
| Army | $ 150.0 |
| Navy | $ 578.2 |
| Medical | $ 118.8 |
| Air Force | $ 1,591.2 |
| Marines | $ 10,270.0 |
| **Total** | **$ 12,562.1** |

*Source: US DOD*

The Port Modernization cost of $195 Million (in 2008 dollars) was not included in the DOD budget for relocation. While it is financially an insignificant fraction (1% to 1½%) of the above expenditures, it is an absolutely critical infrastructure improvement that must be in place before the construction work for the DOD or the base relocation program can begin. The commercial port, was designed and put into service in 1969, and has not undergone any significant modernization since that time. The Master Plan Update 2007 analyses found that without the port modernization and expansion it would not be possible to bring in the cargo needed for the military buildup.

Information on the audited Financial History of PAG is presented in Section 2. A review of the latest financial statements showed that it is not in a position to self finance the Port Modernization and Expansion Program. The Consultant briefly reviewed the various typical financing mechanisms for Port Infrastructure improvements (See Section 4) and focused on the options discussed below.

### 6.1.2 Master Plan CIP Capital Requirements

The Master Plan Update 2007 Report forecasted median cargo volumes through 2030 based on the proposed DOD build up in Guam. This included not only the cargo for the base and associated infrastructure construction program but also the higher cargo levels needed to support the larger military population after base relocations are completed. This forecast was then used as the basis to develop a master plan for the Commercial Cargo Terminal and identify specific facility improvements (Master Plan CIP) that are needed to support the cargo handling needs that the Port faces over the next 20 years. Charts of the Median/Likely cargo projection charts of the financial analyses are shown in Figure A4-1, Appendix 4.

The Financial Scenarios in Section 5 considered the cash flow needs at the Jose D. Leon Guerrero Commercial Terminal over a 22-year period starting in 2009. It was based on capital improvements for the Commercial Terminal modernization and expansion program starting in 2009 and being completed in 2011. The cash for funding this program termed “Master Plan CIP Capital” will be needed during this three or four year time frame.

#### Master Plan CIP Capital Needs in Present Value 2008 Dollars

Capital cost estimates for construction and commissioning of the facilities, equipment and amenities that are required to implement the Port Modernization and Expansion program are described in the Master Plan Update 2007 Report. The estimate of Capital Costs by Major line item as presented in the report is as follows.

**Table 6.1-1 Port Modernization & Expansion Capital Cost Estimate (2008 Dollars)**

| ITEM DESCRIPTION | | Budget Estimate |
|---|---|---|
| Mobilization and Demobilization | | $ 6,640,000 |
| All Other Contract Work not stated below | | $ 2,180,000 |
| Demolition | | $ 7,510,000 |
| Berth F-5 to F-7 Modernization | | $ 34,290,000 |
| Buildings | | $ 7,950,000 |
| Terminal Paving | | $ 14,600,000 |
| Power, Lighting & Electrical | | $ 10,280,000 |
| Site Utilities | | $ 20,110,000 |
| Security | | $ 7,740,000 |
| Container Cranes | | $ 14,500,000 |
| Top-Picks & Spreaders | | $ 2,900,000 |
| Side-Picks | | $ 1,500,000 |
| Other Yard Equipment | | $ 3,700,000 |
| Terminal Operating System | | $ 2,500,000 |
| Gates | | $ 2,500,000 |
| | | $ - |
| CAPITAL COST ESTIMATE TOTAL | | $ 138,900,000 |
| Contingency | 25% | $ 34,900,000 |
| Engineering/Permits/CM | 15% | $ 21,200,000 |
| TOTAL in January 2008 US$ | | $ 195,000,000 |

*Note: The above estimate includes all costs related to facilities that would normally be provided within a Commercial Cargo Terminal by the Port and Terminal Operator. Facilities and equipment normally provided by State (other than PAG) or Federal agencies are not included. These would include CIS, Customs Building and Scanning Equipment, Agriculture Inspection and Fumigation Facilities and other inspection and enforcement facilities. The estimate is also based on the acquisition of three used PANAMAX Cranes. Financing costs such as prepaid interest and any fees associated with acquisition of Federal funds or Private or Bond financing are also not included in the above estimate.*

### 6.1.3 Master Plan CIP Cash Flow Needs

The Capital Cost Estimate presented in Table 6.1-1 was used in conjunction with a notional schedule for completion of the design, construction and delivery of the Port Modernization and Expansion to develop year-by-year cash flow requirements for the analysis. An average escalation factor of 4.80% was used on the basis of the assumptions described in Section 5.2. The escalated cash flow needs for the Port Modernization and Expansion are summarized as follows:

| Federal Fiscal Year | Escalated CF$ Millions |
|---|---|
| 2009 | $12.6 |
| 2010 | $49.2 |
| 2011 | $96.9 |
| 2012 | $60.4 |

The above cash flow is based on the assumptions in one schedule delivery method and may vary depending on the actual implementation plan that PAG uses for design, construction and commissioning of the improvements. A detailed breakdown of the above cash flow summary is presented in Appendix 4, Table A4-1.

### 6.1.4 Maintenance & Replacement Capital Needs

Additional cash flow needs for maintenance capital improvement and replacement programs (Maintenance & Replacement Capital) were also considered in the Financial Scenarios for maintaining the facilities in the years from 2012 through 2030. The Financial Model was based on funding the Maintenance & Replacement Capital from revenues generated from the modernized and expanded Port over the 22-year period. Figure A4-2 in Appendix 4 presents the Maintenance & Replacement Capital Expenditures superimposed on Master Plan CIP Capital cash flows.

### 6.1.5 No Other Alternatives for Moving DOD Cargo

The Port of Guam is the only commercial cargo port in the territory of Guam. Virtually all seaborne commercial container and break bulk cargo moves through the port. While no formal studies were undertaken to build a new port for handling the DOD cargo, based on other green-field projects of this nature it is anticipated that the cost of a new port for this purpose will be multiple times the cost of modernizing and expanding the existing Port (Section 6.1.2). It is also anticipated that the time needed to perform field investigations and environmental studies and obtain U.S. Army Corps of Engineers Section 10 permits will be much more extended than if the existing Port was modernized and expanded.

## 6.2 Opportunities & Constraints for Master Plan CIP Capital

Section 4 presents an overview of typical sources of funding for port development projects in the U.S. It also described three broad types of capital sources that could potentially be tapped over the next three or so years (Master Plan CIP Capital) to implement the Master Plan CIP in readiness for the DOD base construction. These included:

- Grants & Appropriations (Funding)
- Loans Based on Future Port Revenues (PAG Financing)
- Capital Furnished by a PMC Partner (Private Investment)

Each of these types of capital sources has different dynamics applicable to PAG and its financial, management, operational and political environment.

### 6.2.1 Grants & Appropriations (Funding)

These would be in the form of outright grants or congressional appropriations for making the port ready in time to implement the DOD buildup and Marine Base relocation to Guam. Since these would have to be in the form of outright Federal grants or appropriations, PAG would not be required to pay back or have any debt obligation attached to this portion of the Master Plan CIP Capital.

It is clear that the major source of Master Plan CIP Capital should be obtained from Grants and Appropriations[16] as outlined in Section 4. The basis for this is inherent in the findings in Section 5 and may be summarized as follows:

- **Insufficient Port Resources** - The Port does not have sufficient cash or assets on its balance sheet to fund the CIP work using its own resources. Its current cash balance of some $14 to $16 Million was considered as minimum working capital for running the port operations. Also as discussed in Section 4, the Government of Guam does not have the capacity to consider general obligation bonds or other forms of similar financing.
- **Insufficient Future Cash Flow** - Even with the increased cargo flow from the DOD buildup and reasonable increases to tariffs, the Port does not generate sufficient Cash Flow for Bond/Loan payments in order to finance more than a fraction of the immediate CIP cash requirements of $195 Million in 2008 US$. There is insufficient cargo volume and revenues to fund this solely using the revenue stream.
- **Insufficient Cargo for Private Concession** – As outlined in Section 4, there does not seem to be sufficient cargo over a 20- or 30-year term to help attract a BOT or other Concession partner for implementing the project.
- **DOD Base Relocation Driver** – Clearly the cargo throughput demands posed by the proposed DOD base construction and relocation are creating the immediate need for Master Plan CIP Capital. Thus it is reasonable that a major share of the capital be raised from these sources.

Note that the grants or congressional appropriations discussed in this report are separate from any surcharges proposed on military cargo for certain financial scenarios discussed in this report.

In summary, it is not possible to formulate a viable financial framework without a substantial and major portion of the Master Plan CIP Capital coming from Federal Grants & Appropriations.

### 6.2.2 PAG Bond or Loan Financing

This category would include Revenue Bonds or Loans, which PAG would borrow for financing a portion of the Master Plan CIP Capital. PAG would be obligated to pay back the principal and interest on these bonds or loans over the financing term. Revenue bonds issued by PAG and GEDCA and the USDA Community Facilities Guaranteed Loan Program and Direct Loan Program discussed in Section 4 would fall under this category of Master Plan CIP Capital.

It is clear that PAG revenue bonds or a USDA guaranteed loan can provide at least a portion of the Master Plan CIP Capital requirements. The basis for this is inherent in the findings in Section 5 and may be summarized as follows:

- **PAG will have Borrowing Capacity** - PAG's maximum borrowing capacity from this type of Master Plan CIP Capital source ranges from $30 Million to $68 Million depending on the Financial Scenario

[16] This is in the absence any interested parties on providing full project cost funding at extremely low interest rates. See discussion of exploration of JPIC type of governmental full project cost financing based on a government to government agreement.

discussed in Section 5. These are the estimated maximum amounts that lending institutions are likely to support based on PAG's projected cash flows over the next twenty some years.

- **Maintenance Funded First** – The financial analysis included projections of all the identifiable capital needs faced by PAG over the 20-year planning horizon at the Jose D. Leon Guerrero Terminal, including maintenance and replacement capital. Before cash flow from operations can be made available for borrowing, it is important that PAG first fund the on-going maintenance of the port from its operational cash flows.
- **Non Cargo Needs Also Funded** - The Master Plan also identified the fact that PAG will have to perform maintenance related capital improvements in the future on non-cargo related facilities such as Berths F-2 and F-3. These facilities are contiguous and adjacent to the Cargo Terminal and are currently serving the Fishing and Cruise Industry. The costs of such future improvements have been included in the financial analysis in order to obtain a holistic assessment of PAG's ability to borrow funds. However future capital refurbishments such as those for F-2 and F-3 are not caused by the impending base relocation demand for cargo handling at the Commercial Cargo Terminal. It would then be reasonable to assume that PAG establish a mechanism that would generate the cash needed to address these non-DOD driven capital improvement needs.

Because of these considerations it was assumed that a portion of the Master Plan CIP Capital would be raised by PAG Bond or Loan Financing. The rationale for quantifying the amount should be carefully considered due to:

- The business risks that PAG would be facing in undertaking debt
- The issue of fairly distributing the burden for the modernization between the Federal Government and the people of Guam

Section 6.3 and other sections below provide some guidelines for consideration by PAG when identifying the extent of debt it wishes to undertake for implementing the full 20-year program.

### 6.2.3 Capital Furnished by a PMC

Capital furnished by a PMC under a PMC contract would result in a reduction in PAG's need for Master Plan CIP Capital from the funding or financing sources described above. The draft RFP currently drawn up by the Port for a PMC to manage maintenance and related procurement has an option for the PMC to acquire and then lease capital purchases such as terminal equipment to the PAG. If this option is successfully exercised by the PMC Entity, it would result in an equivalent reduction in Master Plan CIP Capital needs.

- **PMC Contribution to Master Plan CIP Capital** – Assuming the PMC finances and leases all terminal equipment as described in Scenario D, the estimated Master Plan CIP Capital contribution from a PMC is about $8 Million (2008 Dollars).
- **PMC Contribution to On-Going Maintenance Capital** – The downstream replacement capital contribution of a PMC under Scenario D is estimated to be $19.6 Million (2008 Dollars) for equipment replacement over the 20-year period.

The extent of this type of contribution to Master Plan CIP Capital will depend entirely on the successful implementation and type of PMC Contract.

### 6.2.4 Developing Guidelines for Choosing a Mix of Capital Sources

The Consultants reviewed the possible contribution of each of the above types of Master Plan CIP Capital sources based on the results of the analysis presented in Section 5 and summarized in Table 5.5-1. This review pointed to some broad guidelines on the extent to which each of the above sources of capital could be applicable for the Financial Analysis Scenarios described in that Section.

The Section 5 analyses purposely focused heavily on anticipated borrowing capacities for PAG under the various scenario conditions. They do not focus on the risks, tolerance for risk, non-monetary PAG contributions and other obligations that PAG may wish to consider in structuring the financial framework.

The cargo demand created by the DOD Buildup is not like any other incremental port user cargo. It requires construction and implementation of port capacities that under other circumstances would not be needed during the life of the financing period. Likewise, it creates on-going operational requirements and business risks for PAG that would not otherwise exist. Therefore it is important that a rational approach be followed in structuring the financial framework that fairly distributes financial responsibility and risk between the Federal Government (DOD) and the Government of Guam. The following Section provides some approaches and conceptual bases for consideration by PAG.

## 6.3 Contribution Approach for Assessing Extent of Funding

As discussed previously it is apparent that the impact of the DOD Buildup on the port is substantial. One approach to quantify the impact of the DOD Buildup on the Port in present value terms was to estimate the resources that would be needed to accommodate the DOD buildup compared to the status quo. The resources that need to be committed to make the base relocation successful may be categorized as follows.

- Net Program Capital Needs for 20 Years ("With DOD Buildup" less "Without DOD Buildup")
- Waterfront Land Assets
- Existing Port Facility Assets
- PAG Working Capital

### 6.3.1 Capital Improvement Needs With & Without DOD Buildup

If the DOD Buildup were not implemented, the cargo forecast over the 20 year period from 2009 through 2030 would be considerably less. While there are critical immediate capital needs to accommodate the cargo flow associated with No DOD Buildup, it is a fraction of the Master CIP program. As described in Section 5.5.6, PAG would be able to adopt a drawn out program for modernizing the Port. Furthermore, because of the reduced peak cargo volumes, the throughput capacity of the Port as it relates to berths, cranes, equipment, land area and other facilities would not need to be as great. Accordingly most of the major expenditures in the Master Plan CIP would not be implemented while others would be deferred until a later date (See Section 5.5.6). As a consequence there would be no overriding reason for PAG to take on a large amount of debt at this time.

### 6.3.2 Contributory Needs & Resources for Port Modernization & Expansion

At the outset the analyses made it clear that the capital needed to modernize and expand the port to handle the DOD Base relocation generated cargo cannot be recovered by ordinary port tariffs. The current tariffs in general are comparable to competing ports such as Saipan and Honolulu. Thus solely increasing tariffs to pay for the port expansion does not seem to be a reasonable approach since these additional tariffs will be paid also by the people of Guam and the surrounding region in order to pay for the port expansion to handle DOD driven cargo.

Therefore this approach attempts to quantify the extraordinary requirements that the DOD buildup places on the Port and adds the Port's asset contributions to the program in order to identify the portion that the Federal Government should provide to make the project a success.

As discussed in Section 5.5.6 in order to assess the monetary impact of the DOD Buildup on the Project, PAG's CIP capital needs over the 20-year financing period were compared with and without the DOD Buildup. This analysis identified that $140 Million more in capital improvements would be needed to support the DOD buildup. Extending this to the other resources that must be committed by PAG, in terms of waterfront land, existing port facilities and working capital, this approach of assessing net resources needed to accommodate the Federal Government is shown on Table 6.3-1.

The table does not take into account any PAG revenue losses such as those due to termination of tenant's leaseholds within the Terminal Cargo area in order to make building space available to handle the break bulk cargo and due to security considerations.

**Table 6.3-1 Present Value of PAG Contribution for Assessing Funding**

| Resources | $2008 Present Value | $2008 Present Value Using 50% of PAG Assets |
|---|---|---|
| Master Plan CIP & Maintenance Capital Over 20 Years *With DOD Buildup* | $266 Million | $266 Million |
| Less: CIP & Maintenance Capital Over 20 Years *Without DOD Buildup* | ($126 Million) | ($126 Million) |
| Net DOD-Related Capital Requirements Over 20-Years | $140 Million | $140 Million |
| Add: PAG Waterfront Land Value | $ 18 Million | $ 9 Million |
| Add: Book Value of Existing PAG Upland Port Facilities | $ 6 Million | $ 3 Million |
| Add: Book Value of Existing PAG Wharf Assets in Cargo Area | $ 11 Million | $ 6 Million |
| Add: PAG Working Capital | $ 16 Million | $ 8 Million |
| **TOTAL: Value of Assets Needed to Support DOD Buildup** | **$191 Million** | **$166 Million** |
| **Remaining PAG-Financed Portion** | **$ 4 Million** | **$ 29 Million** |
| **TOTAL: Master Plan CIP Capital Requirement** | **$195 Million** | **$ 195 Million** |

As Table 6.3-1 shows, in addition to the $140 Million in capital requirements needed to support the DOD Buildup, some $51 Million in existing PAG assets are needed, including land, port facilities, wharves and working capital. Without the commitment of this existing PAG asset base to the DOD Buildup, the DOD program could not succeed. The $51 Million value assumes that 100% of the PAG asset base is committed to the DOD. It could be argued that this overstates PAG's contribution to the DOD because local commercial cargo would simultaneously benefit from the Port's facilities; however, it should also be noted that this is based on the depreciated book value of Port assets, which considerably understates their functional value to DOD.

Based on the above analysis, the total value of capital improvements and PAG assets contributed to the DOD buildup is estimated to be $191 Million, compared with the $195 Million Master Plan CIP Capital requirement. If only 50% of the existing PAG asset base is considered, the value of capital improvements and PAG assets contributed to the DOD Buildup is estimated to be $166 Million.

## 6.4 Risks & Returns Related to PAG Financing

PAG's maximum borrowing capacity for contributing to the Master Plan CIP using PAG Bond or Loan Financing (Section 6.2.2) sources ranges from $35 Million to $68 Million depending on the Financial Scenario discussed in Section 5. A number of considerations are reasonable for discussion when identifying the extent of financing that PAG should undertake. One is an assessment of relative contribution as discussed in Section 6.3. PAG should also give consideration to other factors dealing with policy when deciding on the extent to which a Financing Type or source is used for Master Plan CIP Capital.

### 6.4.1 Business Risks for Meeting Loan Payments

- **Reduction of Business Risks** - Risks faced by PAG would include business risks from events impacting PAG's free cash flow during the relatively long 20 year financing period. These cannot be predicted at this time but could include events such as the following:
  - *Lower Cargo Volumes* - Reduction in cargo revenue in future years such as those due to relocation of carrier transshipment cargo away from Guam, changes to current ocean carrier shipping rotation patterns on service to China via Guam, lower DOD cargo than assumed in the forecasting model etc. These could be beyond PAG's control depending on circumstances.
  - *Future Base Population Changes* - Reduction of the population base in Guam in the future (but within the financing horizon) due to relocation of DOD base(s) away from Guam to address an international strategic balance affecting the country. This would be beyond PAG's control and would reduce the volume of cargo and associated revenue.
  - *Lower Operational Efficiency* - Lower than anticipated operational efficiency in handling cargo resulting in higher labor costs.
  - *Higher Labor Costs* - Higher than estimated labor cost escalation due to unanticipated demographic changes in Guam. These too would be beyond PAG's control.
  - *Natural Disasters* - Affects of natural disasters such as typhoons or earthquakes not covered by insurance or settlement delay resulting in loss of revenue.
- **Scenario Tariffs Do Not Compensate for Risks** - PAG Management would have some tariff options available (within limits) in order to address the yearly cash short fall from risks such as those described above. These include options such as the following:
  - *Coverage Ratio & Working Capital Depletion* - The coverage ratio based on assumed PAG policy to range from 1.6 (median policy) to 2.0 (conservative policy) in the analysis to cover debt service provides some margin. However if revenue reductions without concurrent tariff increases were to occur this would imply that the working capital that PAG brings to the project could be reduced or depleted at the end of the financing period.
  - *Additional Tariff Increases* - The current scenarios presented in Section 5 to assess maximum borrowing capacity all have tariff adjustments at about 50% of the assumed cost of living estimates used in the analyses (2.30% and 2.20% compared to 4.80%). This does provide some leeway for PAG to increase tariffs to cover the loss of net gross operating income posed by the business risks it faces. However under these circumstances the Population of Guam would be paying the additional tariffs in order to mitigate the risks.
  - *Authority to Raise Tariffs* - PAG must have the ability to raise tariffs if it is to address business risks in order for the above option to be effective.
- **Future Opportunity-Driven Needs Not Included** – Consideration of the potential capital requirements associated with any possible future business opportunities are not included in the financial analysis. These opportunities would have to generate their own revenue and associated borrowing capacity in the future. The borrowing capacities listed would put PAG at its maximum based on the current terminal facility needs and cargo forecasts. It should also be noted that the borrowing capacities listed are based on the consolidated PAG pro-forma revenues and expenses including revenues from facilities outside the commercial cargo terminal covered by the Master Plan

CIP Project costs. This would argue for borrowing less than the maximum amounts based on the assumed PAG coverage ratio policy of 1.6 in order to conserve borrowing capacity for other future projects outside the commercial cargo terminal area.

- **Diligence to Mitigate Risk** – In general it is reasonable to conclude that the higher the PAG Bond or Loan Financing the higher the obligation for meeting repayment terms and the greater the management diligence that PAG must exercise in avoiding or mitigating the type of business risks described above.

### 6.4.2 Return on PAG Resources

Another consideration in assessing a reasonable level of Funding is to assess the working capital balance at the end of the project. Table 6.4-1 presents the results of an analysis to estimate the resulting working capital balance at the end of the project under various levels of PAG Loan or Bond debt. The Financial Scenario C described in Section 5 was used as the basis to illustrate. Table 6.4-1 shows:

- The portion of Master Plan CIP Capital in each case would have to be obtained from Federal Appropriations & Grants as shown in Column 1.
- PAG bond or loan amount (Column 2). While Scenario C estimated a maximum PAG borrowing capacity of $68 Million, Table 6.4-1 tests the results of PAG borrowing zero to $70 Million under the same Scenario C tariff, military surcharge and staffing assumptions.
- Anticipated actual Working Capital remaining at the end of the 20-year financing term is shown in both 2008 Present Value (Column 3) and 2030 Future Value dollars (Column 4).

As outlined in Section 5 for Scenario C, the PAG debt obligation would be repaid and left with a zero balance using free PAG cash flow. This is shown in graphical form in Figure 6.4-1

**Table 6.4-1 Impact of Loan Amount on Residual Working Capital (Scenario C)**

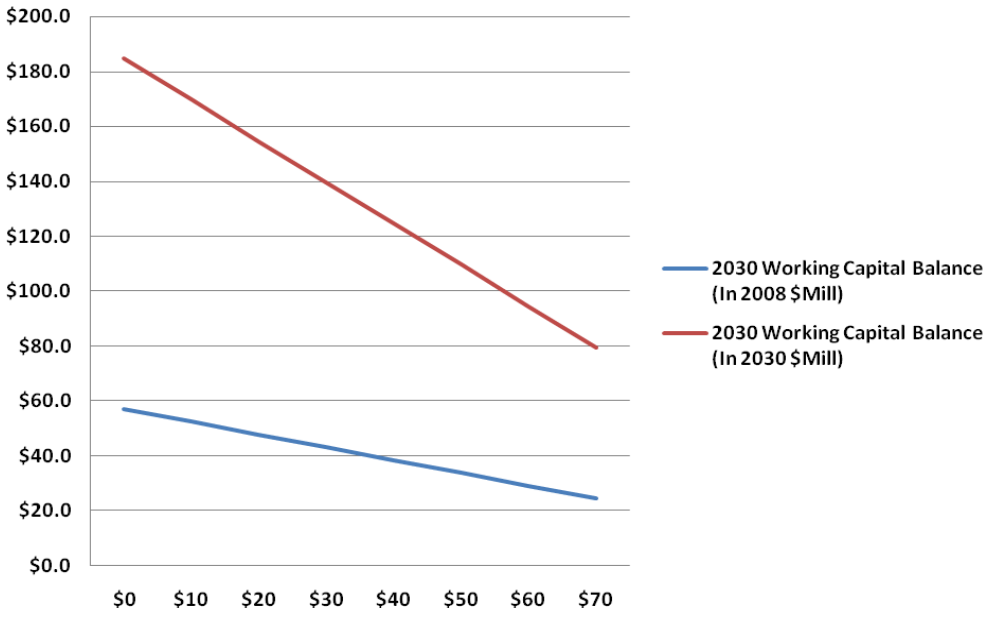
| Grants & Appropriations (2008 $Mill) | PAG Loan or Bond (2008 $Mill) | 2030 Working Capital Balance (In 2008 $Mill) | 2030 Working Capital Balance (In 2030 $Mill) |
|---|---|---|---|
| $125.0 | $70.0 | $24.5 | $79.5 |
| $135.0 | $60.0 | $29.1 | $94.5 |
| $145.0 | $50.0 | $33.7 | $109.6 |
| $155.0 | $40.0 | $38.4 | $124.6 |
| $165.0 | $30.0 | $43.0 | $139.7 |
| $175.0 | $20.0 | $47.7 | $154.8 |
| $185.0 | $10.0 | $52.3 | $169.9 |
| $195.0 | $0.0 | $56.9 | $184.9 |

The results show that for Scenario C the following is anticipated over the 20-year financing period.

- The working capital balance at the end of the term will increase significantly for a structure with smaller PAG Loan or Bond obligation listed in Table 5.5-1. This is because a portion of the free cash flow instead of being expended for principal and interest payments will remain on PAG's balance sheet as retained earnings.
- If only $20 Million was financed using a PAG Loan or Bond and the remainder was obtained from Federal Grants & Appropriations the ending Working Capital balance would be higher:

- The Working Capital balance in 2030 would be $47.7 Million in 2008 Dollars or $154.8 Million in 2030 Dollars.

**Figure 6.4-1 PAG 2030 Working Capital Balance Various Bond/Loan Amounts (Scenario C)**




It is evident that, to the extent that PAG is able to replace borrowing capacity with appropriations or grants the associated retained earnings from free cash flow is available for investment in other future port related infrastructure and business opportunities. Retained earnings also reduce any excessive business risk that PAG must take to meet principal and interest payments during the life of the loan.

It should be borne in mind that the above results are based on Scenario C, which includes the most aggressive set of pricing and cost reduction actions among the various scenarios. Hence, the results reported above tend to reflect the upper limit of PAG's potential return.

## 6.4.3 Comparison of PAG Return on Assets Using MARAD Methodology

MARAD's FY2004 Public Port Finance Survey compares return on assets at U.S. ports using two measures. Whereas the returns discussed above are based only on the port's investment in the assets, the measures used by MARAD below are based on the entire investment, including outside grant funds and appropriations:

- Cash flow as a percent of investment in plant, property & equipment (gross PP&E) – On this measure, the Pacific Coast ports participating in the survey[17] achieved returns ranging from -2.1% to 8.0%.
- Net income as a percent of plant, property & equipment less accumulated depreciation (net PP&E) – On this measure, Pacific Coast ports achieved returns of -10.7% to 6.4%.

Under Scenario C, PAG's return by these measures would be 13% (cash flow/gross PP&E) and 6% (net income/net PP&E), respectively. The first measure is significantly higher than the survey range and the

[17] Anchorage AK, Bellingham WA, Everett WA, Grays Harbor WA, San Francisco, Long Beach, Los Angeles and San Diego.

second at the high end of the survey range. Mainland U.S. ports face strong price competition from neighboring ports and thus returns at these ports could be expected to be lower. In Guam's case it enjoys a monopoly position, which would argue for demanding a higher return than the mainland ports. It must also be noted that if PAG chooses one of the other scenarios the returns would lower than the above figures based on Scenario C.

Note that the above MARAD comparison-methodology provides insight only on the total assets and overall efficiency in using these assets. It does not provide any guidance whatsoever regarding the ratio of funding vs. financing of the ports that responded to the survey. As such it is not helpful in providing guidance to PAG on the extent of borrowing that is reasonable for managing risk.

## 6.5 Other Considerations for Capital Framework

### 6.5.1 Tariff Setting Considerations

It is noted that tariff rates have not been formally increased by PAG since 1993. Any formal tariff rate increase currently has to be passed by the Legislature and approved by the Governor. This has proved to be a very cumbersome process for implementing reasonable tariff increases to keep up with material and labor cost escalation. Port tariff increases are normally an operational level consideration.

All Scenarios discussed in Section 5 (Summary in Table 5.5-1) considered continual annual Tariff Increases in order to provide PAG with cash flow and borrowing capacity for implementing the Master Plan CIP. The increases would average 2.3% each year for Scenarios A, B, C and D and 2.2% for Scenario E. These rates are approximately half of the assumed average Cost of Living Escalation rate of 4.8% that was assumed in the analyses.

The ability to systematically increase tariffs in the future to the minimum levels assumed is critical to the successful implementation of any of the scenarios described. Section 5 shows that the impact on day to day cost of goods in Guam due to the proposed increases is minimal. If tariff increases are not implemented in a timely fashion and other factors occur as assumed in the analyses this will result in the erosion of cash on hand and impact the working capital values discussed previously.

The tariff rate of roughly half the estimated Cost of Living Escalation rate provides a cushion for PAG to adjust rates to address unforeseen contingencies that can affect free cash flow. For example if cargo volumes are somewhat lower than anticipated or there is some loss of cargo due to conditions beyond the control of PAG, it provides flexibility to adjust rates to meet the shortfall and yet not exceed the Cost of Living Escalation rate. Conversely, if for example actual wage inflation is lower than anticipated, PAG has the option to use a lower rate of annual tariff increases depending on policy considerations.

As discussed in Section 5, it is also important that PAG be provided a mechanism to make continuing tariff adjustments on an annual basis to keep up with increasing costs without the need to have these increases approved by the Legislature and Governor. Most successful ports in the US delegate the authority to increase tariffs to their Boards or Commission. Two models suggested by stakeholders for PAG were (i) a PUC type arrangement similar to that followed by GPA and (ii) the Airport model for increasing rates. Also as noted in Section 5, some form of independent PAG authority may be a requirement for implementation of certain types of financing.

### 6.5.2 Net Present Value & IRR of Scenarios

Section 5, Table 5.5-1 presents Net Present Values and Internal Rates of Return for each of the Scenarios A through E. These are consistently negative. These parameters apply to the return on Master Plan CIP Capital (working capital and non-cash resources provided by PAG are not included). The parameters listed in Table 5.5-1 represents the financial efficiency with which the funds committed to Master Plan CIP Capital including Grants, Appropriations, Bonds and Loans are utilized.

## 6.6 Implications for Financing Framework

The foregoing analyses have been provided to help frame the discussion regarding a funding and financing structure for the Master Plan CIP Capital program. While these analyses should be helpful in identifying issues and quantifying certain key parameters, the formulation of such a framework is ultimately a policy matter based upon considerations such as:

- The impact of the DOD buildup on PAG's capital requirements, operations and finances
- The availability or likelihood of federal grants or appropriations to support the DOD
- PAG's apparent borrowing capacity based on the scenario assumptions used
- The market, operating and financial risks that must be assumed by PAG under any given scenario
- PAG's management confidence and tolerance for assuming increased risk
- Allowance for future uncertainties, opportunities and unanticipated financial needs
- A recognition that many changes will simultaneously be occurring at the Port, including new facilities, new operating systems, increased volumes, a potential borrowing obligation, etc.

In light of these and other subjective factors, it is not possible to formulate a definitive, quantitative funding and financing framework, however the following general observations are apparent:

- Based upon the analysis of PAG's future capital requirements with and without the DOD buildup, an absolute minimum Federal contribution of at least $140 million (2008 Dollars) is a reasonable lower bound.
- However the analysis also points strongly to increasing this minimum amount significantly based on PAG contributions and additional risks that it would be taking. On the other hand it is also acknowledged that the opportunity to expand and modernize the Port to the level described in the Master Plan will not be possible without the additional cargo generated by the Military move to Guam. Taking into account the value of the land, facility and working capital assets that PAG would be contributing to the port operations in support of the DOD buildup, an upper limit to the Federal contribution in the range of $180 million (2008 Dollars) is not unreasonable.
- If the above range ($140 to $180 Million in 2008 dollars) of Federal Funding is used as a benchmark to initiate discussions it would leave PAG with the responsibility for bonds or loans in the range of $25 to $55 Million (2008 dollars).
- Considering the additional risks that PAG would need to assume, the potential financial return to PAG, and allowing for future financial needs and uncertainties, it may not be in its best interests for PAG to borrow to its maximum capacity (see borrowing capacities for Scenarios A through E in Section 5) to support the DOD buildup; rather, a borrowing consistent with the above range of Federal participation appears to be reasonable.

Note that the above discussion refers to sums in 2008 dollar value terms.

# Section 7 Conclusions & Recommendations

The Consultants offer the following conclusions and recommendations subject to discussion with PAG Management.

- **Annual Tariff Adjustments** – To the extent that productivity improvements and cost controls cannot keep up with inflation, it is inevitable that periodic tariff increases will be needed to maintain positive financial performance. Again, industry standard practice is to review costs, revenues and pricing on an annual or at least five-year basis and implement tariff increases when and where appropriate. The scenario analyses presented in this study assume that such a process takes place.
- **Authority to Adjust Tariffs** - As discussed in Section 5, it is also important that PAG be provided a mechanism to make continuing tariff adjustments on an annual basis to keep up with increasing costs without the need to have these increases approved by the Legislature and Governor. Most successful ports in the US delegate the authority to increase tariffs to their Boards or Commission. Two models suggested by stakeholders for PAG were (i) a PUC type arrangement similar to that followed by GPA and (ii) the Airport model for increasing rates at the board level. Mechanisms used at other ports include board level approvals with input from customer tariff advisory groups and port staff. Some form of independent PAG authority will likely be a requirement for implementation of certain types of financing. Restrictions may also apply to limit use of earnings cash flow for other government uses unrelated to the Port.
- **Coverage Ratio Policy** – It is important that PAG establish a coverage ratio policy consistent with the type of tariff setting authority provided to PAG. As a point of reference we understand that the GPA which has a PUC type tariff setting arrangement uses a ratio of 1.75 while the Airport with board level authority uses 1.6. These should be confirmed.
- **Maximize Level of Federal Grants & Appropriations** - Based upon the analysis PAG's future capital requirements with and without the DOD buildup, an absolute minimum Federal contribution of at least $140 million (in 2008 dollars) is indicated. Based on the analysis of the risks PAG would need to assume, the potential financial return to PAG, and allowing for future financial needs, it may not be in its best interests for PAG to borrow to its maximum capacity to support the DOD buildup. Therefore the analysis points strongly to increasing this minimum amount significantly based on PAG contributions and risks that it would be taking. These considerations point to a Federal contribution in the range of $140 to $180 million (in 2008 dollars). This would leave a complementary range of $15 to $55 Million (in 2008 dollars) that PAG would have to raise in the form of bonds or loans.
- **Pursue USDA Loans** – The current information seems to suggest pursuit of USDA guaranteed loan program options as an alternative to revenue bonds due to seeming advantages such as tax exemption, fewer restrictions and lower closing costs. However it is recommended that the revenue bond option also be developed in parallel until the final financial framework is clearly identified and adopted. The maximum amounts likely needed based on the suggested ranges for Federal Funding and PAG Financing discussed above seem to result in threshold levels for financing below those currently in place for USDA funding.
- **Mitigate Borrowing Risk** – All of the scenarios assume that PAG takes on a long-term borrowing that will require diligent management with systems in place for maintaining bottom line performance over a 20-year period. Mitigate risk by minimizing the amount borrowed and seek a front end loaded repayment program that can repay debt during the early years when DOD cargo will be at a maximum.
- **Productivity and Variable Workforce Levels** – New cranes, new terminal equipment and a new computerized terminal operating system will result in higher vessel productivity and lower operating costs per container. PAG must use its authority to vary the workforce to address fluctuating cargo

volumes. This must include the ability to hire temporary workers and effectively manage them to meet the variable demand levels expected on a year-to-year and day-to-day basis in the future.

- **Military Surcharge** – Seek to include a military surcharge component, if only to help mitigate local public reaction to future tariff escalations. It also signals that a minor portion of the cost of Master Plan CIP is paid directly by the DOD using funds allocated for the cargo that is a driver for port expansion. This should be based on discussions with the local representatives of the DOD. Note that all applicable military cargo cannot be identified and thus a prudent capture ratio should be considered in the final financial plan based on these discussions. We recommend that PAG confirm from its legal counsel that there are no Federal or Local legal impediments to establishment of such a surcharge that applies only to DOD cargo but not other shippers.
- **PMC Maintenance Scenario** – If a PMC Maintenance type of structure is pursued, ensure that the contract is written in a fashion that does not preclude PAG flexibility for other forms of PMC Contracts in the future with appropriate legislative support.
- **No Revenue Sharing Assumption** - To the extent that any local laws require the transfer of a portion of PAG revenue to the Government's General Fund it may impact PAG's ability to establish bond financing for the modernization program. If necessary, this issue would have to be legally analyzed in detail and addressed legislatively if needed at the time of bond financing. The study model did not include any allowance for the transfer of a portion of the revenue to the Government of Guam's General Fund.

# Appendix 1 List of Stakeholder Meetings

The Financial Feasibility Study team conducted or participated in the following meetings with various stakeholders of the Port Authority of Guam.

| | Company, Organization or Individual | Meeting Date |
|---|---|---|
| 1 | Port Authority of Guam (PAG), Acting General Manager | 04/01/08 |
| 2 | PAG, Financial Division | 04/01/08 |
| 3 | PAG, Financial Division | 04/04/08 |
| 4 | PAG, Operations Management | 04/03/08 |
| 5 | Military Surface Deployment and Distribution Command (SDDC) | 04/02/08 |
| 6 | Guam Economic Development and Commerce Authority (GEDCA) | 04/02/08 |
| 7 | Horizon Lines | 04/02/08 |
| 8 | Matson Navigation Company | 04/04/08 |
| 9 | John Buenavente, GPWA | 04/04/08 |
| 10 | PAG Finance Committee Conference Call | 06/02/08 |
| 11 | PAG Financial Management Team | 06/09/08 |
| 12 | PAG Finance Committee | 06/09/08 |
| 13 | Guam Economic Development and Commerce Authority (GEDCA) | 06/10/08 |
| 14 | PAG Board Members | 06/10/08 |
| 15 | Federal Maritime Administration Representatives | 06/10/08 |
| 16 | Guam Governor's Office | 06/10/08 |
| 17 | U.S. Department of Agriculture, Guam | 06/11/08 |
| 18 | PAG Operations Management | 06/11/08 |
| 19 | Guam Legislature, Senator Espaldon's Office | 06/11/08 |
| 20 | PAG Financial Management Team | 06/12/08 |
| 21 | PAG Comptroller | 06/16/08 |

A number of phone conversations and discussions were also conducted with various stakeholder participants during the course of the study. The meetings in Guam took place during two trips to Guam during the weeks of April 1 and June 9, 2008.

# Appendix 2 Data Collection

## Data Collection Questionnaire

The following data collection questionnaire was distributed to PAG and was used as the basis to collect the data for study.

**PAG Master Plan Update**
**Data Request for Financial Feasibility Study**

This is an outline of the data that the PB International, Inc. needs to obtain from the Port Authority of Guam for completion of the Financial Feasibility study.

Where feasible, please provide the statistical information in spreadsheet form and the descriptive information in Word or PDF format. Where readily available please provide data to PBI the week of March 23, 2008. The remaining data is to be collected and meetings held the week of March 31, 2008 when PBI Financial Feasibility Study team members Don Grigg and Nira Ratnathicam visit the Port.

**Operational Data – General**

- Update Master Plan Container volume data by operational category for remainder of 2007
    - To/from ship
    - To/from CY wheeled
    - To/from CY grounded
    - To/from CFS
    - To/from gate
- Update Master Plan Break-bulk volume data by operational category for remainder of 2007
    - To/from ship
    - To/from open storage
    - To/from covered storage
    - To/from gate
- Please provide the latest organizational chart of the Port
- Employee head count by category
    - Operating
    - Maintenance
    - Security
    - Office/overhead

**Operational Data – Vessel**

- Head count for a one-gang container ship operation by category (e.g., crane drivers, crane chasers, safetymen, tractor/hustler drivers, RTG drivers, checkers, supervisors, etc.)
- Head count for two-gang container ship operation (same detail as above; can supervision cover more than one crane gang?)
- Head count for one-gang break-bulk operation (e.g., crane drivers, crane chasers, safetymen, tractor/hustler drivers, fork lift operators, checkers, supervisors, etc.)

- Head count for two-gang break-bulk ship operation (same detail as above; can supervision cover more than one crane gang?)
- Update of any changes (from master plan data) to average container vessel productivity rates (lifts per hour) by carrier – net productivity (excluding standby time, breaks, etc.) and/or gross productivity (from start of shift to finish, including standby time and breaks, etc.)
- Average break-bulk vessel productivity rates (tons per hour) by commodity – net or gross
- Description of any minimum manning guarantees or minimum guaranteed hours for vessel gang personnel

**Operational Data – Gate/Yard**

- Gate/yard manning (head count) by worker category for typical day and peak day
- Statistical data on weekly (and bi-weekly) demand at the Gate and Yard in conjunction with ship rotations by Matson, Horizon, Kyowa, Seabridge, MEL Lines etc.
- Description of current gate receipt & delivery procedures for both containers and break-bulk
- Daily gate/yard working hours
- Description of any minimum manning guarantees or minimum guaranteed hours for gate/yard personnel
- Description of how special services are organized, performed and billed (e.g., set down, container bunching, inspections, extra labor)
- Description of Customs and Agricultural Inspection Steps & Protocols

**Operational Data – Maintenance**

- Headcount & structure for facility, equipment, lease areas & harbor maintenance

**Operational Data – Security**

- Security manning (head count) by worker category and shift

**Operational Data – Contracts**

- Copies of any written union or dockworker contracts
- Copies of any written maintenance agreements
- Copy of existing crane maintenance agreement with Matson
- Copies of any special stevedoring/handling contracts
- Copy of recent proposal and terms for supply of used cranes by Matson & Horizon

**Operational Data – Other**

- Description of how and by whom lines handling is organized, performed and billed; is this PAG function?
- Details of how pilot and tug services are organized, performed and billed.

**Financial Data – General**

- Copies of Income Statements for last 3-5 years in Excel spreadsheet format
- Copies of any Income Statements with more detailed revenue and expense breakdowns than those posted on the PAG web site
- Copies of any management-type financial analyses, breakdowns or spreadsheets in addition to the official Income Statement posted on the PAG web site (preferably in Excel spreadsheet format)

- Copies of any financial analyses that provide a breakdown of fixed, variable and semi-variable costs
- Copies of any financial analyses that provide a breakdown or allocation of revenues and expenses by business line such as container, break-bulk, cement, commercial fishing, cruise vessels and marinas
- List of capital assets, current book value, useful life and depreciation schedule.

**Financial Data – Operational**

- Latest wage rates (base and special skill rates) for yard, gate, vessel, maintenance and security workforce by worker category

  If possible, please break this budget line item down into labor salaries/wages vs. management salaries/wages for (1) container operations, (2) break-bulk operations, (3) other cargo operations, (4) yard equipment maintenance, (5) facility maintenance, (6) crane maintenance, (7) security, and (8) administration and other
- Holidays – working and "no-work" – and pay rates for holidays
- Out of pocket hourly cost for yard, gate, vessel, maintenance and security workforce by worker category, including payroll taxes and fringe benefits, e.g., insurance, vacation, sick leave, etc.
- Description of any special wage arrangements (overtime/straight time) and hours per working day including weekends and holidays per contract or other agreement or practice
- History of annual percent increases in labor cost/hour
- Breakdown of hourly equipment costs by type of equipment, including fuel, utilities, maintenance and amortization
- Breakdown of security costs

**Financial Data – Pricing**

- Copy of most current tariff, updates and supplements, if different than those posted on the PAG web site
- Description of and pricing information for any non-tariff pricing mechanisms or practices relating to marine operations
- Confirm that previous annual lease rates for all facility and land leases are still current
- History of annual percent increases in man-hour charge-out rates (Tariff Item 41). Please identify the specific local inflation index that is used for "local inflation".
- History of annual or periodic tariff rate increases for: wharfage, container handling/stevedoring (or throughput) rates, break-bulk and other handling/stevedoring (or throughput) rates, dockage, and other key tariff rates

**Financial Data – Revenues**

- Copies of any existing breakdowns or allocations of the following revenue categories ("Other Cargo Related Revenues" from the PAG Income Statement) by business line such as container, break-bulk, cement, commercial fishing, cruise vessels and marinas:
    - Direct Labor Billed
    - Equipment Rental
    - Port Fees & Dockage
    - Wharfage
    - Fuel Surcharge

  - Maritime Security Fee

- Copies of any existing breakdowns or allocations of the following revenue categories ("Non Operating Revenues" from the PAG Income Statement) by business line such as container, break-bulk, cement, commercial fishing, cruise vessels and marinas:
  - Facilities Revenues
  - Demurrage Fees
  - Special Services
  - Federal Reimbursement

**Financial Data – Costs**

- Copies of any existing breakdowns or allocations of the following indirect cost categories ("General & Administrative Expenses" from the PAG Income Statement) by business line, such as container, break-bulk, cement, commercial fishing, cruise vessels and marinas:
  - Salaries & Wages
  - Utilities
  - Repairs & Maintenance
  - Depreciation & Amortization
  - Supplies
  - Agency & Management Fees
  - Professional Services
  - Other Contractual Services
- Copies of any existing breakdowns or allocations Salaries & Wages by operational function such as vessel, gate/yard, maintenance, security, office/overhead
- Copies of any existing breakdowns or allocations of Salaries & Wages into fixed, variable and semi-variable categories
- Copies of any existing breakdowns or allocations of the following indirect cost categories ("General & Administrative Expenses" from the PAG Income Statement) by asset (e.g., Warehouse #1, Berth F-5, etc.) or asset type (buildings, berths, cranes, yard equipment, etc.):
  - Repairs & Maintenance
  - Depreciation & Amortization
- Description, rates, formulas and annual cost of any taxes that are paid by PAG

**Financial Data – Financing & Funding**

- List and description of any existing loans, revenue bonds, grants, etc.
- History of any prior grants, loans, revenue bonds etc.

**Financial & Operational Reports – Previous Studies**

- Copies of operational studies performed by Mercator
- Copy of Pricing and Financial Study performed by Cornell Group
- Other Financial and Efficiency Studies

# List of Data Files Received

The following files were received from PAG as a result of the Data Collection Questionnaire and as follow-up from meetings and phone conversations.

### Financial and General Documents

2008 Fixed Asset Listing-algfeb.xls
2008_Fixed_Asset_Listing-algfeb.xls
Balance Sheet Accounts Breakdown Fiscal Year 2007.xls
Cargo Projections Master Plan 07.xls
Cornell Draft Final Report Jan 2002.PDF
Cornell Executive Summary Feb 2002.PDF
Cornell Terminal Tariff.PDF
Crane Relocation Agreement APL & Sealand0001.pdf
Depreciation 022908.xls
FINAL Grants Loans Internal Status Summary FY 08 update March
Financial Data Request by PB.xls
Financial Feasibility Proposal PB.pdf
Financial Feasibility-Staffing Pattern (version 1).xls
FY06 Chassis & Grounded Stats September.xls
FY07 Chassis & Grounded Stats 100807.xls
Gantry 3 Repairs and Maintenance FY 03 to FY 07.xls
GDP Listing (2).pdf
Letter PAG to Matson MOA Crane Maint.pdf
License Agreement Filed with FMC 010408.pdf
Maintenance Gantry 3 & Operational Supplies Expenses FY 03 TO
Management Audit 2000 prt 1.pdf
Management Audit 2000 prt 2.pdf
Management Audit 2000 prt 3.pdf
Management Audit 2000 prt 4.pdf
Management Audit 2000 prt 5.pdf
Management Audit 2000 prt 6.pdf
Marina Rules Regulation.pdf
Matson Horizon Board Resolution, Letter of Intent & License
Matson MOA Crane Maintenance.pdf
Other Revenues Detail Fiscal Year 2007.xls
PAG Data Questionnaire Financial Feasibility.pdf
PAG Staffing Pattern as of Mar 31 2008.xls
PAG Terminal Tariff continuation.pdf
PAG Terminal Tariff.pdf
PAG_Data-Quesionnaire_Financial-Feasibility.pdf
PBI Letter Financial Feasibility 013008.pdf
PBI Team Experience.pdf
Regular Salaries by Division.xls
Revenues & Expenses Breakdown FY03 TO FY07.xls
Revenues & Expenses Breakdown FY05 TO FY07.xls
Staffing Pattern 03 31 2008.pdf
Tonnage and Container Report FY 2007.xls
Draft RFP for PMC for Maintenance of Equipment & Facilities
Unified Pay Schedule Oct 1 1991.pdf

### Operational Reports

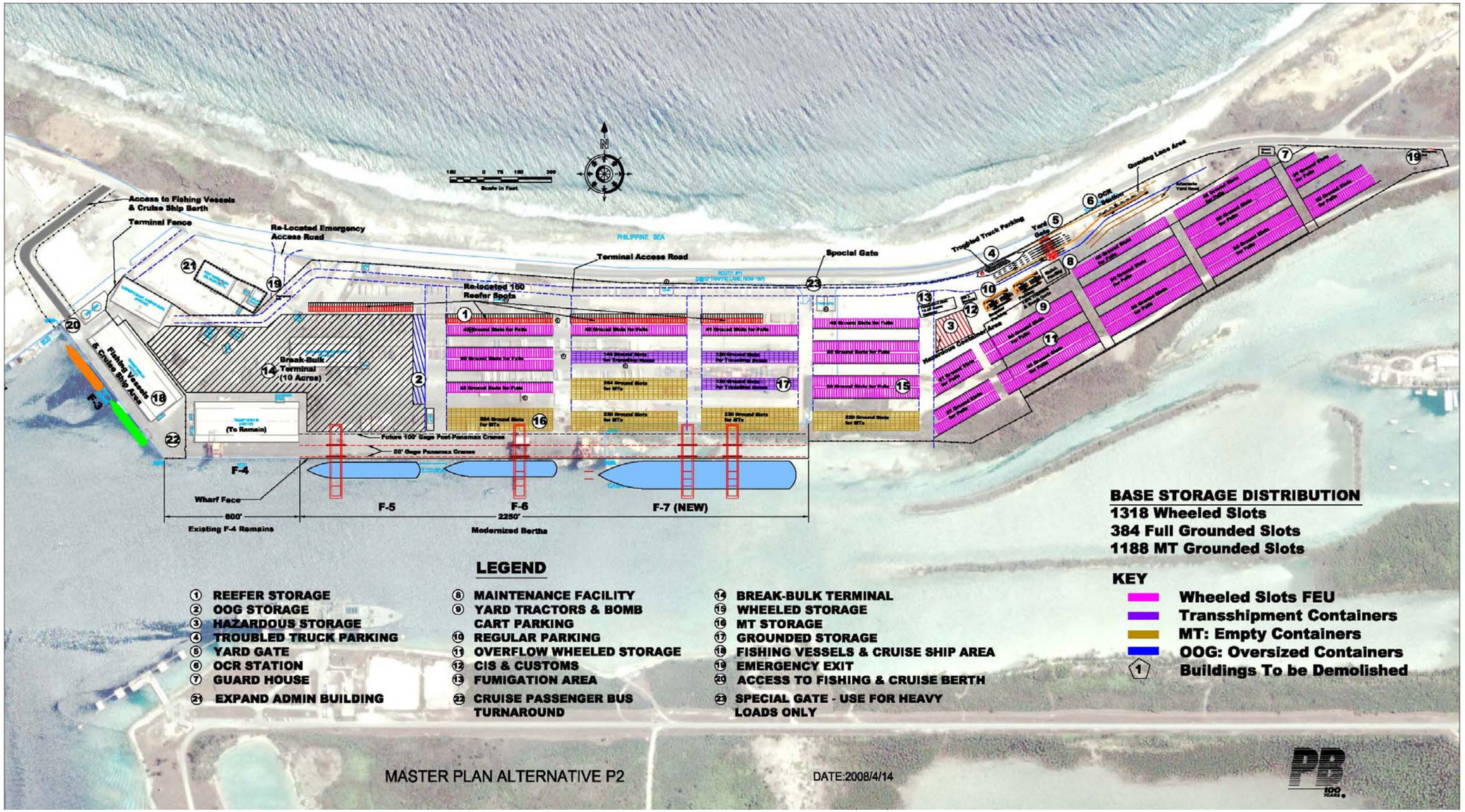
trans report.xls

vessel ops1.xls
HL Hawk V013 MCO .xls
ISLANDER MATSON V044.xls
KYOWA HIBISCUS V89.xls
MAUNAWILI V059.xls
STADT HAMBURG V14 MCO Book1.xls
SUPER SHUTTLE V716 MCO .xls
SUPER SHUTTLE V717.xls

# Appendix 3 Master Plan CIP Layout

Attached is a conceptual drawing depicting the basis for the Master Plan CIP Budget Estimates presented in Table 6.1-1.

**Figure A3-1 Master Plan Concept – Basis for Master Plan CIP Capital Estimates**



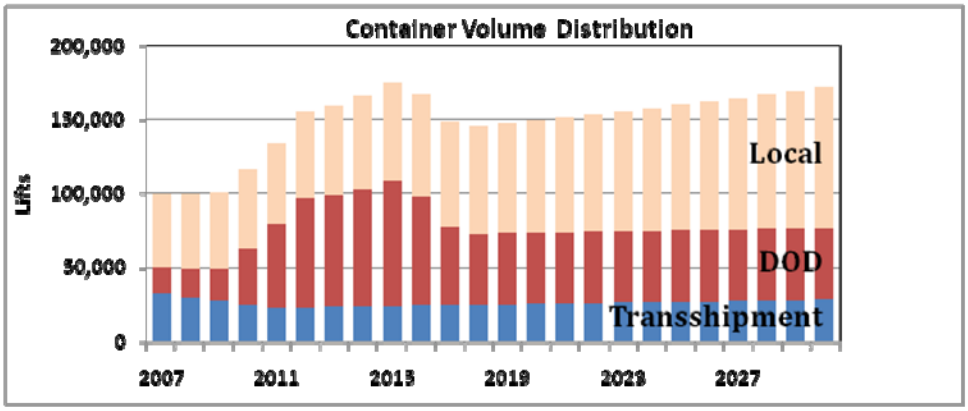
# Appendix 4 Miscellaneous Scenario Tables & Charts

This Appendix presents the assumed Median/Likely Cargo Forecast Charts, Master Plan CIP Capital and Maintenance & Replacement Capital Improvement cash flow assumptions and the FTE levels (for the Base Case Scenario) used in the Financial Feasibility Study.

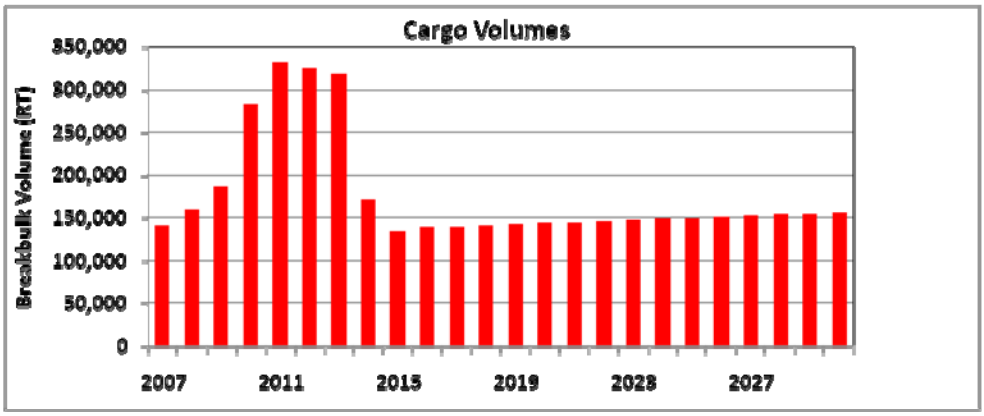
**Figure A4-1 Master Plan CIP Cargo Forecasts**

# Median/Likely Cargo Forecasts

Containers Lifts/Year



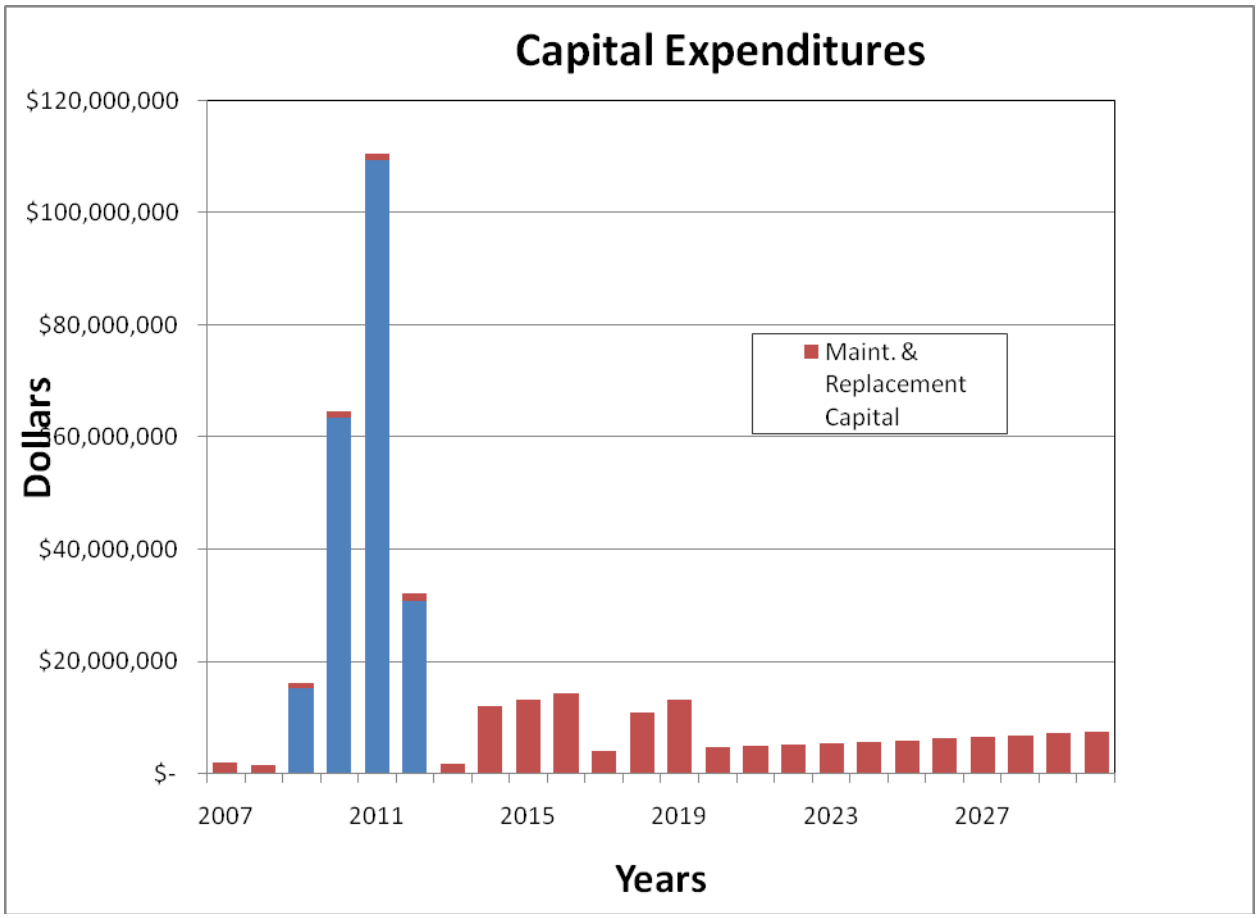

Breakbulk Tons/Year



## Table A4-1 Master Plan CIP Capital Cash Flow

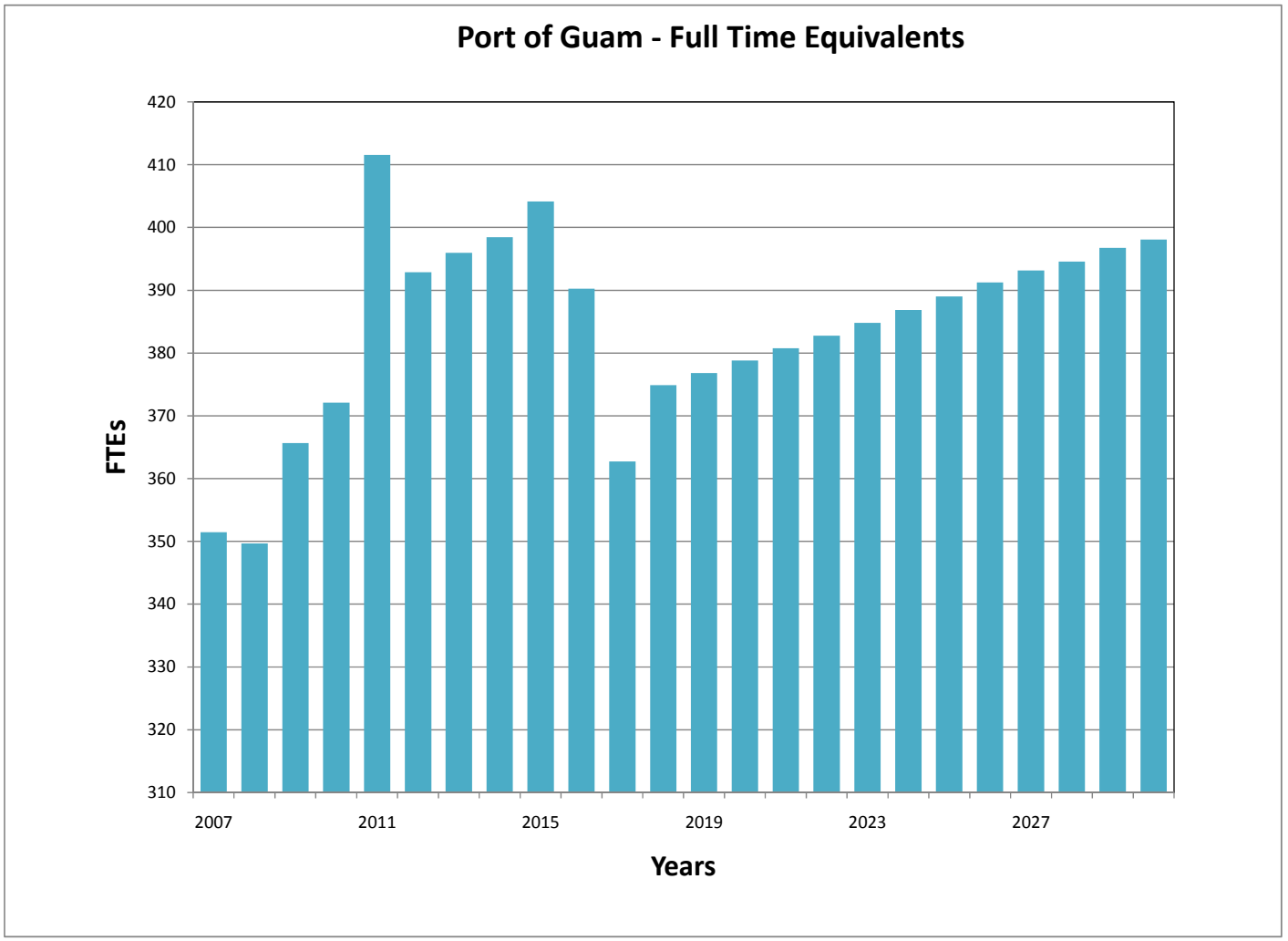
| Escalated CF US $MILLION (Based on Notional Schedule) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | Assumed Annual Guam Escalation Rate: | | | | | | | | | | | | 4.8% | | | | |
| FEDERAL FISCAL YEAR | 2009/Q1 | | | 2009/Q2 | | | 2009/Q3 | | | 2009/Q4 | | | 2010/Q1 | | | 2010/Q2 | | | 2010/Q3 | | | 2010/Q4 | | | 2011/Q1 | | | 2011/Q2 | | | 2011/Q3 | | | 2011/Q4 | | | 2012/Q1 | | | 2012/Q2 | |
| CALENDAR YEAR | 2008 | | | 2009 | | | | | | | | | | | | 2010 | | | | | | | | | | | 2011 | | | | | | | | | | | | 2012 | |
| | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| **Funding Classification** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Planning | $1,400 | | | $614 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | |
| AEE&M | $1,714 | | | $1,202 | | | $2,744 | | | $1,723 | | | $964 | | | $1,838 | | | $1,857 | | | $1,894 | | | $1,838 | | | $1,015 | | | $1,015 | | | $1,015 | | | $1,015 | | | $1,064 | |
| Traffic | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $288 | | | $863 | | | $863 | | | $905 | |
| Security | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $1,782 | | | $1,782 | | | $1,782 | | | $1,782 | | | $1,867 | |
| Marine | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $9,026 | | | $9,026 | | | $5,380 | | | $5,380 | | | $5,638 | | | $5,638 | | | $5,638 | | | $0 | | | $0 | |
| Upland | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $2,062 | | | $2,062 | | | $2,404 | | | $2,404 | | | $4,988 | | | $10,139 | | | $15,867 | | | $15,867 | | | $16,628 | |
| Operational | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $1,439 | | | $1,508 | |
| Equipment | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $3,625 | | | $3,625 | | | $3,625 | | | $3,625 | | | $4,662 | | | $4,885 | |
| Contingency AEE&M | $0 | | | $0 | | | $1,614 | | | $1,614 | | | $1,614 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $0 | |
| Contingency Capital | $0 | | | $0 | | | $0 | | | $0 | | | $0 | | | $3,695 | | | $3,695 | | | $3,695 | | | $3,695 | | | $3,872 | | | $3,872 | | | $3,872 | | | $3,872 | | | $4,058 | |
| TOTAL - Quarterly | $3,114 | | | $1,816 | | | $4,358 | | | $3,338 | | | $2,578 | | | $16,622 | | | $16,640 | | | $13,373 | | | $16,943 | | | $20,920 | | | $26,359 | | | $32,662 | | | $29,500 | | | $30,915 | |
| TOTAL - FEDERAL FISCAL YEAR | $12,625 | | | | | | | | | | | | $49,213 | | | | | | | | | | | | $96,885 | | | | | | | | | | | | $60,415 | | | | |

**Figure A4-2 Master Plan CIP Capital and Maintenance & Replacement Capital Expenditures**




*Note: Figures are escalated to year of expenditure*

**Figure A4-3 FTE Estimates for Base Case Scenario A**



# Appendix 5 Preliminary Financial Scenarios

Twenty preliminary scenario variations were assessed using the model described in Section 4. The various financial and operational input parameters, financial performance indicators and approximate borrowing capacity associated with each preliminary scenario are presented below. Since these preliminary scenarios were first developed and presented in early June 2008, various assumptions and parameters have changed, which are reflected in the refined scenarios in Section 5. These changes are not reflected below.

## Existing Conditions Scenario

- This scenario represents a continuation of current tariff and lease pricing levels with no increases, escalations or special surcharges and continuation of the current PAG operation. Increased productivity as a result of the new cranes and terminal equipment is assumed as discussed above. This scenario demonstrates that without tariff and/or lease price increases, revenues cannot keep pace with cost increases and maintenance/replacement capital needs and, consequently, cash flow available for bond/loan payments will turn negative by about 2014. Under this scenario, PAG has no capacity to borrow funds for the Master Plan CIP program.

## Pricing Scenarios

- Minimum Pricing (Base Case) – The Minimum Pricing Scenario identifies the minimum level of annual tariff rate escalations that would be required to maintain a positive cash flow after maintenance/replacement capital expenditures through 2030. With tariff increases of 2.25% annually, cash flows would remain positive through 2030 and PAG would have a borrowing capacity of approximately $33,000,000. This is taken to be the Base Case for building other scenarios and comparison among scenarios.
- 50% DOD Surcharge – The DOD Surcharge Scenario assumes an approximately 50% wharfage surcharge on all DOD construction and on-going military base traffic to 2040 (including existing DOD cargo) – $50/container and $2 revenue ton on breakbulk cargo – *with no tariff rate increases* as in the Base Case above. This scenario indicates that a 50% DOD surcharge on its own could generate about $62,000,000 in revenues over 20 years ($36,000,000 present value discounted at 5%). After the buildup, however, the surcharges would not produce a positive cash flow after maintenance/replacement capital and, therefore, may be insufficient to support a borrowing. Further analyses indicate that much higher DOD surcharge rates (e.g., $200/container and $8/RT) would not necessarily produce positive cash flow in the out years, but could produce substantial positive cash flows in the first 10 years when construction and other DOD traffic is high. It is possible that such a revenue structure could support a front-end loaded financing structure.
- Minimum Pricing + 50% DOD Surcharge – The minimum 2.25% tariff increases plus a 50% DOD surcharge would result in significant positive cash flow after maintenance/replacement capital throughout the period to 2030 and result in a borrowing capacity of approximately $53,000,000.
- CPI Pricing – The CPI Pricing Scenario assumes that PAG implements 4.8% annual tariff rate, which would equal the labor and non-labor cost escalation rates assumed in the model. This would result in a significantly higher borrowing capacity of about $159,000,000.
- CPI Pricing + 50% DOD Surcharge – CPI pricing plus a 50% DOD wharfage surcharge would result in a borrowing capacity of about $178,000,000, or about 90% of the amount needed to finance the Master Plan CIP program.
- Minimum Pricing + 8-Year General Wharfage Surcharge – Finally, this scenario assumes the minimum 2.25% tariff increases plus a temporary (8-year) general surcharge of $90/container and $3.00/RT on breakbulk assessed on all cargo during the DOD buildup years. The surcharge would generate a

present value of approximately $84,000,000 in revenues, which equals about 75% of the estimated impact of the DOD buildup on PAG's 20-year capital improvement requirements. A surcharge well over 100% ($120/container and $5/RT) would be required to recoup the entire DOD impact. This structure would result in a borrowing capacity of approximately $74,000,000. Because of the high cash flows in the early years and lower cash flows in the out years, this scenario would likely require a front-end loaded financing structure.

## Crane Productivity Scenarios

- 2 Containers/Hour Lower – This scenario tests the sensitivity of the financial results to lower than projected crane productivity. Productivity that is 2 containers/hour lower for most carriers would result in somewhat higher operating costs and lower cash flows after maintenance/replacement capital than in the Minimum Pricing Base Case, but not by much. The resulting borrowing capacity in this scenario is about $32,000,000 or $1,000,000 lower than the Base Case.
- 2 Containers/Hour Higher – This case tests the upside sensitivity of PAG's finances to higher than projected crane productivity. Productivity that is 2 containers/hr. higher would result in higher cash flows after maintenance/ replacement capital and an approximately $39,000,000 borrowing capacity ($6,000,000 higher than the Base Case).
- 5 Containers/Hour Higher – Productivity that is 5 containers/hr. higher would result in a borrowing capacity of approximately $65,000,000.

## Staff Reduction Scenarios

- 10% Equipment Maintenance Reduction in 2012 – With all new equipment after completion of the Master Plan CIP program, the equipment maintenance function will focus more on preventive maintenance rather than repairs. This scenario tests the sensitivity of PAG's financials to a one-time 10% reduction in equipment maintenance staffing (approximately 5 positions). Compared to the Base Case, a 10% staffing reduction in 2012 would result in higher cash flows after maintenance/replacement capital and an approximately $37,000,000 borrowing capacity, $4,000,000 higher than under the Base Case.
- 10% Facility Maintenance Reduction in 2012 – Likewise, this scenario tests the sensitivity to a one-time 10% reduction in facility maintenance staffing in 2012 (approximately 3 positions). This action would have little impact compared with the Base Case. A borrowing capacity of about $34,000,000 is indicated, which is $1,000,000 higher than the Base Case.
- 10% Administrative Reduction in 2012 – With a new integrated Terminal Operating System after completion of the Master Plan CIP, administrative support for data entry, data analysis, accounting, billing, and other administrative functions will be reduced. This scenario tests the sensitivity of the model to a one-time 5% reduction in administrative staffing[18] (approximately 8 positions). This action could result in a slight increase in cash flow after maintenance/replacement capital and an approximately $2,000,000 increase in borrowing capacity to $35,000,000.
- Equipment, Facility & Administrative Reduction in 2012 – The combined effect of staffing reduction in all three areas (16 positions) could be an approximately $6,000,000 increase in borrowing capacity, or $39,000,000.

## Combination Scenario

- This scenario tests the results of an aggressive combination of management actions in pricing and staff reduction. It assumes the 2.25% minimum tariff rate increases, the 50% DOD wharfage surcharge and 10% staffing reductions in equipment maintenance, facility maintenance and

[18] Administrative (7601-7613) excluding General Manager's office, Harbor Master's office and Port Police.

administration. The result would be a borrowing capacity of approximately $59,000,000, or $26,000,000 more than in the Base Case.

## Financing Scenarios

- 5.0% Interest – This scenarios tests the sensitivity to a lower interest rate on borrowing. With a 5.0% rate, a half point lower than in the Base Case, PAG's bond/loan payments would be about $32,000/year lower and its borrowing capacity would be about $34,000,000, or $1,000,000 higher.
- 1.5 Coverage Ratio – With a coverage ratio of 1.5 instead of 2.0, PAG's borrowing capacity could be about $12,000,000 higher than the Base Case, or about $45,000,000.
- 5.0% Interest + 1.5 Coverage – With a combination of both a lower interest rate and lower coverage ratio, PAG's borrowing capacity could be about $13,000,000 higher, or $46,000,000.
- 30-Year Financing + 2.83% Tariff Increases – This scenario looks at the feasibility of a longer financing term. With a 30-year financing, cash outflows for future replacement of the Master Plan CIP cranes in 2033 would fall inside of the financing period and tariff increases of 2.83% annually would be required to maintain positive cash flows. Under this scenario, PAG's borrowing capacity would be about $64,000,000.

## PMC Scenario

- The PMC scenario makes the following assumptions:
  - A private terminal operator (PMC) performs all cargo operations, crane and equipment maintenance and terminal security beginning at the completion of the Master Plan CIP in 2012.
  - PAG assumes a more traditional landlord port role, including facility maintenance, management of leased properties and marinas, harbor master functions, port police, etc.
  - About 20 staff positions are eliminated, saving about $1,000,000 per year (2008 dollars).
  - The PMC provides $25,100,000 million in capital for the cranes, terminal equipment and terminal operating system plus the downstream replacement capital for the cranes and equipment.
  - The PMC seeks at minimum 25% pre-tax internal rate of return on its investment.
  - As payment to PAG, the PMC under these terms is able to pass all wharfage and dockage revenues to PAG and pay an estimated $7,500,000 license fee, which is subject to the 2.25% annual tariff escalation factor.
- The resulting impact on PAG's borrowing capacity is an approximately $5,000,000 reduction from the Base Case to $28,000,000. Taken together with the PMC's capital contribution, however, this scenario results in a total of $53,000,000 in initial Master Plan CIP cost being covered, or $20,000,000 more than under the Base Case.

## No DOD Scenario

This scenario represents one financial framework that PAG would face if the proposed DOD buildup were not to occur. It considers the same financial parameters used for the Base Case scenario for purposes of comparison. The results show that PAG would not have any borrowing capacity to implement the capital improvement program over a 30 year horizon. Tariffs would have to be increased at some 2.5% (compared to the 1.89% rate for the Base Case) to generate capacity to borrow approximately $28,000,000 to implement this program. The comparative near-term capital demand for this No-DOD Buildup scenario was $100,000,000 for facilities equivalent to the $195,000,000 needed for all the other DOD-Buildup scenarios.

## Figure A5-1 Summary of Preliminary Financial Analysis Scenarios

**PAG Masterplan CIP Financial Feasibility Study**
**Summary of Preliminary Financial Analysis Scenarios**

**PRELIMINARY & CONFID**

| | EXISTING | PRICING SCENARIOS | | | | | | CRANE PRODUCTIVITY SCENARIOS | | | STAFFING SCENARIOS | | | | COMBO | FINANCING SCENARIOS | | | | | PMC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | NO PRICING CHANGES | BASE CASE MINIMUM PRICING | 50% DOD SURCHARGE | MINIMUM PRICING + 50% DOD SURCHARGE | CPI PRICING | CPI PRICING + 50% DOD SURCHARGE | MIN PRICING + 8-YR GENERAL WHARFAGE SURCHARGE | 2 CONT/HR LOWER | 2 CONT/HR HIGHER | 5 CONT/HR HIGHER | EQ MAINT | FAC MAINT | ADMIN | EQ MAINT FAC MAINT + ADMIN | 2.25% TARIFF, DOD SURCH. + STAFF REDUCTIONS | LOWER INTEREST RATE | LOWER COVERAGE RATIO | LOWER INTEREST & COVERAGE | 30-YEAR FINANCING + 2.83% TARIFF INCREASES | PMC PERFORMS OPERATIONS & EQUIP MAINT |
| **CARGO FORECAST** | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case | Base case |
| **PRICING VARIABLES** | | | | | | | | | | | | | | | | | | | | |
| Tariff Rate Escalation | **0.00%** | **2.25%** | **0.00%** | **2.25%** | **4.80%** | **4.80%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.25%** | **2.83%** | **2.25%** |
| Non-Tariff Revenue Escalation | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 8-Year General Wharfage Surcharg | $ - | $ - | $ - | $ - | $ - | $ - | **$ 90.00** | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 8-Year General Wharfage Surcharg | $ - | $ - | $ - | $ - | $ - | $ - | **$ 3.00** | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Military Wharfage Surcharge - Con | $ - | $ - | **$ 50.00** | **$ 50.00** | $ - | **$ 50.00** | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | **$ 50.00** | $ - | $ - | $ - | $ - | $ - |
| Military Wharfage Surcharge - Bre | $ - | $ - | **$ 2.00** | **$ 2.00** | $ - | **$ 2.00** | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | **$ 2.00** | $ - | $ - | $ - | $ - | $ - |
| Military Cargo Capture Rate | 0% | 0% | **100%** | **100%** | 0% | **100%** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **ECONOMIC VARIABLES** | | | | | | | | | | | | | | | | | | | | |
| Interest Earned on Port Investmen | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% |
| Average CPI | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% |
| Labor Cost Escalation | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% |
| Non-Labor Cost Escalation | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% |
| Capital Cost Escalation | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% | 4.80% |
| **OPERATING VARIABLES** | | | | | | | | | | | | | | | | | | | | |
| Crane Productivity - CNMI Carriers | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Crane Productivity - FSM/MI Carrie | 20 | 20 | 20 | 20 | 20 | 20 | 20 | **18** | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Crane Productivity - Asia Carriers | 20 | 20 | 20 | 20 | 20 | 20 | 20 | **18** | **22** | **25** | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Crane Productivity - USWC Carrier | 25 | 25 | 25 | 25 | 25 | 25 | 25 | **23** | **27** | **30** | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Equipment Maintenance Staffing A | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | **10%** | 0% | 0% | **10%** | **10%** | 0% | 0% | 0% | 0% | 0% |
| Facility Maintenance Staffing Adju | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | **10%** | 0% | **10%** | **10%** | 0% | 0% | 0% | 0% | 0% |
| Administrative Staffing Adjustmen | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | **10%** | **10%** | **10%** | 0% | 0% | 0% | 0% | 0% |
| **FINANCIAL VARIABLES** | | | | | | | | | | | | | | | | | | | | |
| Discount Rate | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | **5.00%** | 5.50% | **5.00%** | 5.50% | 5.50% |
| Coverage Ratio | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | **1.5** | **1.5** | 2.0 | 2.0 |
| Bond/Loan Interest Rate | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | 5.50% | **5.00%** | 5.50% | **5.00%** | 5.50% | 5.50% |
| Bond/Loan Term | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | **30** | 20 |
| **MODEL RESULTS** | | | | | | | | | | | | | | | | | | | *30-Year Analysis** | |
| Net Cash Flow in 2030 (After Main | $ (30,546,963) | $ 284,896 | $ (27,943,829) | $ 2,888,030 | $ 58,898,817 | $ 61,501,951 | $ 284,896 | $ (910,522) | $ 2,048,742 | $ 2,048,795 | $ 1,139,431 | $ 441,237 | $ 809,054 | $ 1,819,929 | $ 4,423,063 | $ 284,896 | $ 284,896 | $ 284,896 | $ 121,150 | $ 3,871,533 |
| Internal Rate of Return (IRR) | negative | -9.40% | negative | -2.40% | 13.34% | 16.12% | 2.53% | -10.46% | -5.97% | -5.02% | -7.47% | -8.98% | -8.08% | -6.15% | -0.53% | -9.40% | -9.40% | -9.40% | 2.16% | -5.29% |
| Net Present Value (NPV) | $ (242,771,891) | $ (96,890,073) | $ (205,146,041) | $ (59,237,509) | $ 132,546,901 | $ 170,229,741 | $ (14,428,898) | $ (99,837,502) | $ (87,481,275) | $ (83,168,009) | $ (91,116,265) | $ (95,748,216) | $ (93,061,804) | $ (86,146,140) | $ (48,493,576) | $ (97,026,008) | $ (96,890,073) | $ (97,026,008) | $ (40,881,273) | $ (84,572,402) |
| **Estimated Maximum Borrowing** | **none** | **$ 33,605,922** | **none** | **$ 52,783,835** | **$ 159,195,828** | **$ 178,373,765** | **$ 74,399,051** | **$ 31,965,641** | **$ 38,842,036** | **$ 41,242,422** | **$ 36,819,118** | **$ 34,241,380** | **$ 35,736,402** | **$ 39,585,055** | **$ 58,762,968** | **$ 34,462,021** | **$ 44,807,897** | **$ 45,949,362** | **$ 64,306,425** | **$ 28,181,973** |
| Estimated Bond/Loan Payment | n/a | $ (2,665,518) | n/a | $ (4,186,650) | $ (12,626,920) | $ (14,148,054) | $ (5,901,102) | $ (2,535,416) | $ (3,080,830) | $ (3,271,221) | $ (2,920,378) | $ (2,715,920) | $ (2,834,501) | $ (3,139,764) | $ (4,660,896) | $ (2,633,640) | $ (3,554,023) | $ (3,511,520) | $ (4,193,961) | $ (2,235,307) |
| PMC Capital Contribution | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | $ 25,100,000 |
| **PMC Capital + PAG Borrowing C** | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | **$ 53,281,973** |
| **PRESENT VALUE OF CAPITAL OUTLAYS** | | | | | | | | | | | | | | | | | | | | |
| Master Plan CIP capital + downstr | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 273,160,881 | $ 310,276,628 | $ 273,160,881 |
| Maintenance/replacement capital v | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 126,355,812 | $ 147,893,775 | $ 126,355,812 |
| Difference caused by DOD build | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 146,805,069 | $ 162,382,853 | $ 146,805,069 |

*Based on analysis through 2040, including comparison to "No DoD" Scenario

Note: This is an approximation only. A complete revenue bond analysis will be performed by GEDCA's financial advisor and/or the underwriter including estimates of interest earned, reserve requirements, bond fees, closing costs, etc.

# Appendix 6 GEDCA/BOFA Pro-forma Analyses

GEDCA is the Gov Guam agency that is responsible for securing bond financing for all Government of Guam institutions including PAG. GEDCA has contracted with Banc of America Securities, LLC (BOFA) to provide advice and analyses on revenue bond financing initiatives for the Government of Guam.

PBI worked with GEDCA and BOFA through the study to obtain input and advice on revenue bond options for PAG. In order to obtain a benchmark as close as is feasible to current market conditions for bond financing for PAG, PBI provided GEDCA/BOFA the revenue and expense projections and other output from the model for the Base Case scenario discussed in Section 5.5. BOFA on behalf of GEDCA performed a detailed pro-forma revenue bond issue debt service analysis. The output from this pro-forma analysis and another analysis performed for a $40 million PAG bond financing with level payments are included in this Appendix 6.

## BOFA Pro-forma Analysis for Base Case with 1.25 Coverage Ratio (10 Pages)



SOURCES AND USES OF FUNDS

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

| | |
|---|---|
| Sources: | |
| Bond Proceeds: | |
| Par Amount | 65,025,000.00 |
| Net Premium | 349,880.80 |
| | 65,374,880.80 |
| Uses: | |
| Project Fund Deposits: | |
| Project Fund | 54,500,000.00 |
| Other Fund Deposits: | |
| Reserve Fund | 6,098,318.37 |
| Capitalized Interest Fund | 3,474,650.08 |
| | 9,572,968.45 |
| Delivery Date Expenses: | |
| Cost of Issuance | 650,250.00 |
| Underwriter's Discount | 624,240.00 |
| | 1,274,490.00 |
| Other Uses of Funds: | |
| Additional Proceeds | 27,422.35 |
| | 65,374,880.80 |

BOND MATURITY TABLE

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

| Maturity Date | Serial Bonds | Term Bond Due 2023 | Term Bond Due 2028 | Total |
|---|---|---|---|---|
| 10/01/2010 | 2,175,000 | | | 2,175,000 |
| 10/01/2011 | 5,125,000 | | | 5,125,000 |
| 10/01/2012 | 10,365,000 | | | 10,365,000 |
| 10/01/2013 | 10,660,000 | | | 10,660,000 |
| 10/01/2014 | 2,595,000 | | | 2,595,000 |
| 10/01/2015 | 2,845,000 | | | 2,845,000 |
| 10/01/2016 | 480,000 | | | 480,000 |
| 10/01/2017 | 5,005,000 | | | 5,005,000 |
| 10/01/2018 | 2,695,000 | | | 2,695,000 |
| 10/01/2019 | | 2,845,000 | | 2,845,000 |
| 10/01/2020 | | 3,015,000 | | 3,015,000 |
| 10/01/2021 | | 2,940,000 | | 2,940,000 |
| 10/01/2022 | | 2,820,000 | | 2,820,000 |
| 10/01/2023 | | 2,630,000 | | 2,630,000 |
| 10/01/2024 | | | 2,455,000 | 2,455,000 |
| 10/01/2025 | | | 2,100,000 | 2,100,000 |
| 10/01/2026 | | | 1,810,000 | 1,810,000 |
| 10/01/2027 | | | 1,400,000 | 1,400,000 |
| 10/01/2028 | | | 1,065,000 | 1,065,000 |
| | 41,945,000 | 14,250,000 | 8,830,000 | 65,025,000 |

BOND DEBT SERVICE

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

| Period Ending | Principal | Coupon | Interest | Debt Service | Annual Debt Service |
|---|---|---|---|---|---|
| 04/01/2009 | | | 1,763,428.13 | 1,763,428.13 | |
| 10/01/2009 | | | 1,763,428.13 | 1,763,428.13 | 3,526,856.26 |
| 04/01/2010 | | | 1,763,428.13 | 1,763,428.13 | |
| 10/01/2010 | 2,175,000 | 4.000% | 1,763,428.13 | 3,938,428.13 | 5,701,856.26 |
| 04/01/2011 | | | 1,719,928.13 | 1,719,928.13 | |
| 10/01/2011 | 5,125,000 | 5.000% | 1,719,928.13 | 6,844,928.13 | 8,564,856.26 |
| 04/01/2012 | | | 1,591,803.13 | 1,591,803.13 | |
| 10/01/2012 | 10,365,000 | 5.000% | 1,591,803.13 | 11,956,803.13 | 13,548,606.26 |
| 04/01/2013 | | | 1,332,678.13 | 1,332,678.13 | |
| 10/01/2013 | 10,660,000 | 5.000% | 1,332,678.13 | 11,992,678.13 | 13,325,356.26 |
| 04/01/2014 | | | 1,066,178.13 | 1,066,178.13 | |
| 10/01/2014 | 2,595,000 | 5.000% | 1,066,178.13 | 3,661,178.13 | 4,727,356.26 |
| 04/01/2015 | | | 1,001,303.13 | 1,001,303.13 | |
| 10/01/2015 | 2,845,000 | 5.000% | 1,001,303.13 | 3,846,303.13 | 4,847,606.26 |
| 04/01/2016 | | | 930,178.13 | 930,178.13 | |
| 10/01/2016 | 480,000 | 5.250% | 930,178.13 | 1,410,178.13 | 2,340,356.26 |
| 04/01/2017 | | | 917,578.13 | 917,578.13 | |
| 10/01/2017 | 5,005,000 | 5.375% | 917,578.13 | 5,922,578.13 | 6,840,156.26 |
| 04/01/2018 | | | 783,068.75 | 783,068.75 | |
| 10/01/2018 | 2,695,000 | 5.500% | 783,068.75 | 3,478,068.75 | 4,261,137.50 |
| 04/01/2019 | | | 708,956.25 | 708,956.25 | |
| 10/01/2019 | 2,845,000 | 6.000% | 708,956.25 | 3,553,956.25 | 4,262,912.50 |
| 04/01/2020 | | | 623,606.25 | 623,606.25 | |
| 10/01/2020 | 3,015,000 | 6.000% | 623,606.25 | 3,638,606.25 | 4,262,212.50 |
| 04/01/2021 | | | 533,156.25 | 533,156.25 | |
| 10/01/2021 | 2,940,000 | 6.000% | 533,156.25 | 3,473,156.25 | 4,006,312.50 |
| 04/01/2022 | | | 444,956.25 | 444,956.25 | |
| 10/01/2022 | 2,820,000 | 6.000% | 444,956.25 | 3,264,956.25 | 3,709,912.50 |
| 04/01/2023 | | | 360,356.25 | 360,356.25 | |
| 10/01/2023 | 2,630,000 | 6.000% | 360,356.25 | 2,990,356.25 | 3,350,712.50 |
| 04/01/2024 | | | 281,456.25 | 281,456.25 | |
| 10/01/2024 | 2,455,000 | 6.375% | 281,456.25 | 2,736,456.25 | 3,017,912.50 |
| 04/01/2025 | | | 203,203.13 | 203,203.13 | |
| 10/01/2025 | 2,100,000 | 6.375% | 203,203.13 | 2,303,203.13 | 2,506,406.26 |
| 04/01/2026 | | | 136,265.63 | 136,265.63 | |
| 10/01/2026 | 1,810,000 | 6.375% | 136,265.63 | 1,946,265.63 | 2,082,531.26 |
| 04/01/2027 | | | 78,571.88 | 78,571.88 | |
| 10/01/2027 | 1,400,000 | 6.375% | 78,571.88 | 1,478,571.88 | 1,557,143.76 |
| 04/01/2028 | | | 33,946.88 | 33,946.88 | |
| 10/01/2028 | 1,065,000 | 6.375% | 33,946.88 | 1,098,946.88 | 1,132,893.76 |
| | 65,025,000 | | 32,548,093.88 | 97,573,093.88 | 97,573,093.88 |

BOND DEBT SERVICE

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

| Period Ending | Principal | Coupon | Interest | Debt Service |
|---|---|---|---|---|
| 10/01/2009 | | | 3,526,856.26 | 3,526,856.26 |
| 10/01/2010 | 2,175,000 | 4.000% | 3,526,856.26 | 5,701,856.26 |
| 10/01/2011 | 5,125,000 | 5.000% | 3,439,856.26 | 8,564,856.26 |
| 10/01/2012 | 10,365,000 | 5.000% | 3,183,606.26 | 13,548,606.26 |
| 10/01/2013 | 10,660,000 | 5.000% | 2,665,356.26 | 13,325,356.26 |
| 10/01/2014 | 2,595,000 | 5.000% | 2,132,356.26 | 4,727,356.26 |
| 10/01/2015 | 2,845,000 | 5.000% | 2,002,606.26 | 4,847,606.26 |
| 10/01/2016 | 480,000 | 5.250% | 1,860,356.26 | 2,340,356.26 |
| 10/01/2017 | 5,005,000 | 5.375% | 1,835,156.26 | 6,840,156.26 |
| 10/01/2018 | 2,695,000 | 5.500% | 1,566,137.50 | 4,261,137.50 |
| 10/01/2019 | 2,845,000 | 6.000% | 1,417,912.50 | 4,262,912.50 |
| 10/01/2020 | 3,015,000 | 6.000% | 1,247,212.50 | 4,262,212.50 |
| 10/01/2021 | 2,940,000 | 6.000% | 1,066,312.50 | 4,006,312.50 |
| 10/01/2022 | 2,820,000 | 6.000% | 889,912.50 | 3,709,912.50 |
| 10/01/2023 | 2,630,000 | 6.000% | 720,712.50 | 3,350,712.50 |
| 10/01/2024 | 2,455,000 | 6.375% | 562,912.50 | 3,017,912.50 |
| 10/01/2025 | 2,100,000 | 6.375% | 406,406.26 | 2,506,406.26 |
| 10/01/2026 | 1,810,000 | 6.375% | 272,531.26 | 2,082,531.26 |
| 10/01/2027 | 1,400,000 | 6.375% | 157,143.76 | 1,557,143.76 |
| 10/01/2028 | 1,065,000 | 6.375% | 67,893.76 | 1,132,893.76 |
| | 65,025,000 | | 32,548,093.88 | 97,573,093.88 |

NET DEBT SERVICE

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

| Date | Total Debt Service | Capitalized Interest Fund | Net Debt Service |
|---|---|---|---|
| 04/01/2009 | 1,763,428.13 | 1,763,428.13 | |
| 10/01/2009 | 1,763,428.13 | 1,763,428.13 | |
| 04/01/2010 | 1,763,428.13 | | 1,763,428.13 |
| 10/01/2010 | 3,938,428.13 | | 3,938,428.13 |
| 04/01/2011 | 1,719,928.13 | | 1,719,928.13 |
| 10/01/2011 | 6,844,928.13 | | 6,844,928.13 |
| 04/01/2012 | 1,591,803.13 | | 1,591,803.13 |
| 10/01/2012 | 11,956,803.13 | | 11,956,803.13 |
| 04/01/2013 | 1,332,678.13 | | 1,332,678.13 |
| 10/01/2013 | 11,992,678.13 | | 11,992,678.13 |
| 04/01/2014 | 1,066,178.13 | | 1,066,178.13 |
| 10/01/2014 | 3,661,178.13 | | 3,661,178.13 |
| 04/01/2015 | 1,001,303.13 | | 1,001,303.13 |
| 10/01/2015 | 3,846,303.13 | | 3,846,303.13 |
| 04/01/2016 | 930,178.13 | | 930,178.13 |
| 10/01/2016 | 1,410,178.13 | | 1,410,178.13 |
| 04/01/2017 | 917,578.13 | | 917,578.13 |
| 10/01/2017 | 5,922,578.13 | | 5,922,578.13 |
| 04/01/2018 | 783,068.75 | | 783,068.75 |
| 10/01/2018 | 3,478,068.75 | | 3,478,068.75 |
| 04/01/2019 | 708,956.25 | | 708,956.25 |
| 10/01/2019 | 3,553,956.25 | | 3,553,956.25 |
| 04/01/2020 | 623,606.25 | | 623,606.25 |
| 10/01/2020 | 3,638,606.25 | | 3,638,606.25 |
| 04/01/2021 | 533,156.25 | | 533,156.25 |
| 10/01/2021 | 3,473,156.25 | | 3,473,156.25 |
| 04/01/2022 | 444,956.25 | | 444,956.25 |
| 10/01/2022 | 3,264,956.25 | | 3,264,956.25 |
| 04/01/2023 | 360,356.25 | | 360,356.25 |
| 10/01/2023 | 2,990,356.25 | | 2,990,356.25 |
| 04/01/2024 | 281,456.25 | | 281,456.25 |
| 10/01/2024 | 2,736,456.25 | | 2,736,456.25 |
| 04/01/2025 | 203,203.13 | | 203,203.13 |
| 10/01/2025 | 2,303,203.13 | | 2,303,203.13 |
| 04/01/2026 | 136,265.63 | | 136,265.63 |
| 10/01/2026 | 1,946,265.63 | | 1,946,265.63 |
| 04/01/2027 | 78,571.88 | | 78,571.88 |
| 10/01/2027 | 1,478,571.88 | | 1,478,571.88 |
| 04/01/2028 | 33,946.88 | | 33,946.88 |
| 10/01/2028 | 1,098,946.88 | | 1,098,946.88 |
| | 97,573,093.88 | 3,526,856.26 | 94,046,237.62 |

RESERVE FUND

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

Reserve Fund (RESERVE)

| Date | Deposit | Interest @ 4% | Principal | Balance |
|---|---|---|---|---|
| 10/01/2008 | 6,098,318.37 | | | 6,098,318.37 |
| 04/01/2009 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2009 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2010 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2010 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2011 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2011 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2012 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2012 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2013 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2013 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2014 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2014 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2015 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2015 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2016 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2016 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2017 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2017 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2018 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2018 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2019 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2019 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2020 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2020 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2021 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2021 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2022 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2022 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2023 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2023 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2024 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2024 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2025 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2025 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2026 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2026 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2027 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2027 | | 121,966.37 | | 6,098,318.37 |
| 04/01/2028 | | 121,966.37 | | 6,098,318.37 |
| 10/01/2028 | | 121,966.37 | 6,098,318.37 | |
| | 6,098,318.37 | 4,878,654.80 | 6,098,318.37 | |

| | |
|---|---|
| Yield To Receipt Date: | 4.0000001% |
| Arbitrage Yield: | 5.5992442% |
| Value of Negative Arbitrage: | 1,164,577.44 |

RESERVE FUND

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

Capitalized Interest Fund (CAPI)

| Date | Deposit | Interest @ 2% | Principal | Scheduled Draws | Balance |
|---|---|---|---|---|---|
| 10/01/2008 | 3,474,650.08 | | | | 3,474,650.08 |
| 04/01/2009 | | 34,746.50 | 1,728,681.63 | 1,763,428.13 | 1,745,968.45 |
| 10/01/2009 | | 17,459.68 | 1,745,968.45 | 1,763,428.13 | |
| | 3,474,650.08 | 52,206.18 | 3,474,650.08 | 3,526,856.26 | |

| | |
|---|---|
| Yield To Receipt Date: | 1.9999998% |
| Arbitrage Yield: | 5.5992442% |
| Value of Negative Arbitrage: | 90,560.35 |

BOND SOLUTION

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

| Period Ending | Proposed Principal | Proposed Debt Service | Total Adj Debt Service | Revenue Constraints | Unused Revenues | Debt Serv Coverage |
|---|---|---|---|---|---|---|
| 10/01/2009 | | 3,526,856 | 3,526,856 | 2,240,121 | -1,286,735 | 63.51608% |
| 10/01/2010 | 2,175,000 | 5,701,856 | 5,701,856 | 7,130,551 | 1,428,695 | 125.05666% |
| 10/01/2011 | 5,125,000 | 8,564,856 | 8,564,856 | 10,708,548 | 2,143,692 | 125.02893% |
| 10/01/2012 | 10,365,000 | 13,548,606 | 13,548,606 | 16,936,723 | 3,388,117 | 125.00712% |
| 10/01/2013 | 10,660,000 | 13,325,356 | 13,325,356 | 16,661,473 | 3,336,117 | 125.03586% |
| 10/01/2014 | 2,595,000 | 4,727,356 | 4,727,356 | 5,911,195 | 1,183,838 | 125.04229% |
| 10/01/2015 | 2,845,000 | 4,847,606 | 4,847,606 | 6,061,542 | 1,213,936 | 125.04197% |
| 10/01/2016 | 480,000 | 2,340,356 | 2,340,356 | 2,925,823 | 585,467 | 125.01615% |
| 10/01/2017 | 5,005,000 | 6,840,156 | 6,840,156 | 8,554,285 | 1,714,128 | 125.05978% |
| 10/01/2018 | 2,695,000 | 4,261,138 | 4,261,138 | 5,331,141 | 1,070,004 | 125.11075% |
| 10/01/2019 | 2,845,000 | 4,262,913 | 4,262,913 | 5,331,141 | 1,068,229 | 125.05866% |
| 10/01/2020 | 3,015,000 | 4,262,213 | 4,262,213 | 5,331,141 | 1,068,929 | 125.07920% |
| 10/01/2021 | 2,940,000 | 4,006,313 | 4,006,313 | 5,008,888 | 1,002,576 | 125.02490% |
| 10/01/2022 | 2,820,000 | 3,709,913 | 3,709,913 | 4,642,679 | 932,766 | 125.14254% |
| 10/01/2023 | 2,630,000 | 3,350,713 | 3,350,713 | 4,192,230 | 841,517 | 125.11458% |
| 10/01/2024 | 2,455,000 | 3,017,913 | 3,017,913 | 3,778,848 | 760,935 | 125.21396% |
| 10/01/2025 | 2,100,000 | 2,506,406 | 2,506,406 | 3,138,667 | 632,261 | 125.22579% |
| 10/01/2026 | 1,810,000 | 2,082,531 | 2,082,531 | 2,608,133 | 525,602 | 125.23861% |
| 10/01/2027 | 1,400,000 | 1,557,144 | 1,557,144 | 1,950,848 | 393,704 | 125.28372% |
| 10/01/2028 | 1,065,000 | 1,132,894 | 1,132,894 | 1,416,652 | 283,758 | 125.04722% |
| | 65,025,000 | 97,573,094 | 97,573,094 | 119,860,629 | 22,287,535 | |

BOND SUMMARY STATISTICS

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

| | |
|---|---|
| Dated Date | 10/01/2008 |
| Delivery Date | 10/01/2008 |
| Last Maturity | 10/01/2028 |
| Arbitrage Yield | 5.599244% |
| True Interest Cost (TIC) | 5.748140% |
| Net Interest Cost (NIC) | 5.800147% |
| All-In TIC | 5.905610% |
| Average Coupon | 5.751664% |
| Average Life (years) | 8.703 |
| Duration of Issue (years) | 6.612 |
| Par Amount | 65,025,000.00 |
| Bond Proceeds | 65,374,880.80 |
| Total Interest | 32,548,093.88 |
| Net Interest | 32,822,453.08 |
| Total Debt Service | 97,573,093.88 |
| Maximum Annual Debt Service | 13,548,606.26 |
| Average Annual Debt Service | 4,878,654.69 |
| Underwriter's Fees (per $1000) | |
| Average Takedown | 7.500000 |
| Management Fee | 1.000000 |
| Other Fee | 1.100000 |
| Total Underwriter's Discount | 9.600000 |
| Bid Price | 99.578071 |

| Bond Component | Par Value | Price | Average Coupon | Average Life |
|---|---|---|---|---|
| Serial Bonds | 41,945,000.00 | 101.497 | 5.119% | 5.383 |
| Term Bond Due 2023 | 14,250,000.00 | 98.852 | 6.000% | 12.956 |
| Term Bond Due 2028 | 8,830,000.00 | 98.702 | 6.375% | 17.606 |
| | 65,025,000.00 | | | 8.703 |

BOND SUMMARY STATISTICS

Port Authority of Guam
2008 Revenue Bonds
Base Case
20-Year Maturity, CAPI through 10/1/2009
Front Loaded Debt Service - 1.25x DSC

| | TIC | All-In TIC | Arbitrage Yield |
|---|---|---|---|
| Par Value | 65,025,000.00 | 65,025,000.00 | 65,025,000.00 |
| + Accrued Interest | | | |
| + Premium (Discount) | 349,880.80 | 349,880.80 | 349,880.80 |
| - Underwriter's Discount | -624,240.00 | -624,240.00 | |
| - Cost of Issuance Expense | | -650,250.00 | |
| - Other Amounts | | | |
| Target Value | 64,750,640.80 | 64,100,390.80 | 65,374,880.80 |
| Target Date | 10/01/2008 | 10/01/2008 | 10/01/2008 |
| Yield | 5.748140% | 5.905610% | 5.599244% |

## BOFA Pro-forma Analysis for $40 Million Project Fund Deposits (10 Pages)



SOURCES AND USES OF FUNDS

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

| | |
|---|---|
| Sources: | |
| Bond Proceeds: | |
| Par Amount | 48,035,000.00 |
| Net Original Issue Discount | -261,599.80 |
| | 47,773,400.20 |
| Uses: | |
| Project Fund Deposits: | |
| Project Fund | 40,000,000.00 |
| Other Fund Deposits: | |
| Reserve Fund | 4,318,825.00 |
| Capitalized Interest Fund | 2,750,449.83 |
| | 7,069,274.83 |
| Delivery Date Expenses: | |
| Cost of Issuance | 240,175.00 |
| Underwriter's Discount | 461,136.00 |
| | 701,311.00 |
| Other Uses of Funds: | |
| Additional Proceeds | 2,814.37 |
| | 47,773,400.20 |

BOND MATURITY TABLE

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

| Maturity Date | Serial Bonds | Term Bond Due 2023 | Term Bond Due 2028 | Total |
|---|---|---|---|---|
| 10/01/2010 | 1,525,000 | | | 1,525,000 |
| 10/01/2011 | 1,585,000 | | | 1,585,000 |
| 10/01/2012 | 1,665,000 | | | 1,665,000 |
| 10/01/2013 | 1,750,000 | | | 1,750,000 |
| 10/01/2014 | 1,835,000 | | | 1,835,000 |
| 10/01/2015 | 1,925,000 | | | 1,925,000 |
| 10/01/2016 | 2,025,000 | | | 2,025,000 |
| 10/01/2017 | 2,130,000 | | | 2,130,000 |
| 10/01/2018 | 2,245,000 | | | 2,245,000 |
| 10/01/2019 | | 2,370,000 | | 2,370,000 |
| 10/01/2020 | | 2,510,000 | | 2,510,000 |
| 10/01/2021 | | 2,660,000 | | 2,660,000 |
| 10/01/2022 | | 2,820,000 | | 2,820,000 |
| 10/01/2023 | | 2,990,000 | | 2,990,000 |
| 10/01/2024 | | | 3,170,000 | 3,170,000 |
| 10/01/2025 | | | 3,370,000 | 3,370,000 |
| 10/01/2026 | | | 3,585,000 | 3,585,000 |
| 10/01/2027 | | | 3,815,000 | 3,815,000 |
| 10/01/2028 | | | 4,060,000 | 4,060,000 |
| | 16,685,000 | 13,350,000 | 18,000,000 | 48,035,000 |

BOND DEBT SERVICE

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

| Period Ending | Principal | Coupon | Interest | Debt Service | Annual Debt Service |
|---|---|---|---|---|---|
| 04/01/2009 | | | 1,395,887.50 | 1,395,887.50 | |
| 10/01/2009 | | | 1,395,887.50 | 1,395,887.50 | 2,791,775.00 |
| 04/01/2010 | | | 1,395,887.50 | 1,395,887.50 | |
| 10/01/2010 | 1,525,000 | 4.000% | 1,395,887.50 | 2,920,887.50 | 4,316,775.00 |
| 04/01/2011 | | | 1,365,387.50 | 1,365,387.50 | |
| 10/01/2011 | 1,585,000 | 5.000% | 1,365,387.50 | 2,950,387.50 | 4,315,775.00 |
| 04/01/2012 | | | 1,325,762.50 | 1,325,762.50 | |
| 10/01/2012 | 1,665,000 | 5.000% | 1,325,762.50 | 2,990,762.50 | 4,316,525.00 |
| 04/01/2013 | | | 1,284,137.50 | 1,284,137.50 | |
| 10/01/2013 | 1,750,000 | 5.000% | 1,284,137.50 | 3,034,137.50 | 4,318,275.00 |
| 04/01/2014 | | | 1,240,387.50 | 1,240,387.50 | |
| 10/01/2014 | 1,835,000 | 5.000% | 1,240,387.50 | 3,075,387.50 | 4,315,775.00 |
| 04/01/2015 | | | 1,194,512.50 | 1,194,512.50 | |
| 10/01/2015 | 1,925,000 | 5.000% | 1,194,512.50 | 3,119,512.50 | 4,314,025.00 |
| 04/01/2016 | | | 1,146,387.50 | 1,146,387.50 | |
| 10/01/2016 | 2,025,000 | 5.250% | 1,146,387.50 | 3,171,387.50 | 4,317,775.00 |
| 04/01/2017 | | | 1,093,231.25 | 1,093,231.25 | |
| 10/01/2017 | 2,130,000 | 5.375% | 1,093,231.25 | 3,223,231.25 | 4,316,462.50 |
| 04/01/2018 | | | 1,035,987.50 | 1,035,987.50 | |
| 10/01/2018 | 2,245,000 | 5.500% | 1,035,987.50 | 3,280,987.50 | 4,316,975.00 |
| 04/01/2019 | | | 974,250.00 | 974,250.00 | |
| 10/01/2019 | 2,370,000 | 6.000% | 974,250.00 | 3,344,250.00 | 4,318,500.00 |
| 04/01/2020 | | | 903,150.00 | 903,150.00 | |
| 10/01/2020 | 2,510,000 | 6.000% | 903,150.00 | 3,413,150.00 | 4,316,300.00 |
| 04/01/2021 | | | 827,850.00 | 827,850.00 | |
| 10/01/2021 | 2,660,000 | 6.000% | 827,850.00 | 3,487,850.00 | 4,315,700.00 |
| 04/01/2022 | | | 748,050.00 | 748,050.00 | |
| 10/01/2022 | 2,820,000 | 6.000% | 748,050.00 | 3,568,050.00 | 4,316,100.00 |
| 04/01/2023 | | | 663,450.00 | 663,450.00 | |
| 10/01/2023 | 2,990,000 | 6.000% | 663,450.00 | 3,653,450.00 | 4,316,900.00 |
| 04/01/2024 | | | 573,750.00 | 573,750.00 | |
| 10/01/2024 | 3,170,000 | 6.375% | 573,750.00 | 3,743,750.00 | 4,317,500.00 |
| 04/01/2025 | | | 472,706.25 | 472,706.25 | |
| 10/01/2025 | 3,370,000 | 6.375% | 472,706.25 | 3,842,706.25 | 4,315,412.50 |
| 04/01/2026 | | | 365,287.50 | 365,287.50 | |
| 10/01/2026 | 3,585,000 | 6.375% | 365,287.50 | 3,950,287.50 | 4,315,575.00 |
| 04/01/2027 | | | 251,015.63 | 251,015.63 | |
| 10/01/2027 | 3,815,000 | 6.375% | 251,015.63 | 4,066,015.63 | 4,317,031.26 |
| 04/01/2028 | | | 129,412.50 | 129,412.50 | |
| 10/01/2028 | 4,060,000 | 6.375% | 129,412.50 | 4,189,412.50 | 4,318,825.00 |
| | 48,035,000 | | 36,772,981.26 | 84,807,981.26 | 84,807,981.26 |

BOND DEBT SERVICE

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

| Period Ending | Principal | Coupon | Interest | Debt Service |
|---|---|---|---|---|
| 10/01/2009 | | | 2,791,775.00 | 2,791,775.00 |
| 10/01/2010 | 1,525,000 | 4.000% | 2,791,775.00 | 4,316,775.00 |
| 10/01/2011 | 1,585,000 | 5.000% | 2,730,775.00 | 4,315,775.00 |
| 10/01/2012 | 1,665,000 | 5.000% | 2,651,525.00 | 4,316,525.00 |
| 10/01/2013 | 1,750,000 | 5.000% | 2,568,275.00 | 4,318,275.00 |
| 10/01/2014 | 1,835,000 | 5.000% | 2,480,775.00 | 4,315,775.00 |
| 10/01/2015 | 1,925,000 | 5.000% | 2,389,025.00 | 4,314,025.00 |
| 10/01/2016 | 2,025,000 | 5.250% | 2,292,775.00 | 4,317,775.00 |
| 10/01/2017 | 2,130,000 | 5.375% | 2,186,462.50 | 4,316,462.50 |
| 10/01/2018 | 2,245,000 | 5.500% | 2,071,975.00 | 4,316,975.00 |
| 10/01/2019 | 2,370,000 | 6.000% | 1,948,500.00 | 4,318,500.00 |
| 10/01/2020 | 2,510,000 | 6.000% | 1,806,300.00 | 4,316,300.00 |
| 10/01/2021 | 2,660,000 | 6.000% | 1,655,700.00 | 4,315,700.00 |
| 10/01/2022 | 2,820,000 | 6.000% | 1,496,100.00 | 4,316,100.00 |
| 10/01/2023 | 2,990,000 | 6.000% | 1,326,900.00 | 4,316,900.00 |
| 10/01/2024 | 3,170,000 | 6.375% | 1,147,500.00 | 4,317,500.00 |
| 10/01/2025 | 3,370,000 | 6.375% | 945,412.50 | 4,315,412.50 |
| 10/01/2026 | 3,585,000 | 6.375% | 730,575.00 | 4,315,575.00 |
| 10/01/2027 | 3,815,000 | 6.375% | 502,031.26 | 4,317,031.26 |
| 10/01/2028 | 4,060,000 | 6.375% | 258,825.00 | 4,318,825.00 |
| | 48,035,000 | | 36,772,981.26 | 84,807,981.26 |

NET DEBT SERVICE

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

| Date | Total Debt Service | Capitalized Interest Fund | Net Debt Service |
|---|---|---|---|
| 04/01/2009 | 1,395,887.50 | 1,395,887.50 | |
| 10/01/2009 | 1,395,887.50 | 1,395,887.50 | |
| 04/01/2010 | 1,395,887.50 | | 1,395,887.50 |
| 10/01/2010 | 2,920,887.50 | | 2,920,887.50 |
| 04/01/2011 | 1,365,387.50 | | 1,365,387.50 |
| 10/01/2011 | 2,950,387.50 | | 2,950,387.50 |
| 04/01/2012 | 1,325,762.50 | | 1,325,762.50 |
| 10/01/2012 | 2,990,762.50 | | 2,990,762.50 |
| 04/01/2013 | 1,284,137.50 | | 1,284,137.50 |
| 10/01/2013 | 3,034,137.50 | | 3,034,137.50 |
| 04/01/2014 | 1,240,387.50 | | 1,240,387.50 |
| 10/01/2014 | 3,075,387.50 | | 3,075,387.50 |
| 04/01/2015 | 1,194,512.50 | | 1,194,512.50 |
| 10/01/2015 | 3,119,512.50 | | 3,119,512.50 |
| 04/01/2016 | 1,146,387.50 | | 1,146,387.50 |
| 10/01/2016 | 3,171,387.50 | | 3,171,387.50 |
| 04/01/2017 | 1,093,231.25 | | 1,093,231.25 |
| 10/01/2017 | 3,223,231.25 | | 3,223,231.25 |
| 04/01/2018 | 1,035,987.50 | | 1,035,987.50 |
| 10/01/2018 | 3,280,987.50 | | 3,280,987.50 |
| 04/01/2019 | 974,250.00 | | 974,250.00 |
| 10/01/2019 | 3,344,250.00 | | 3,344,250.00 |
| 04/01/2020 | 903,150.00 | | 903,150.00 |
| 10/01/2020 | 3,413,150.00 | | 3,413,150.00 |
| 04/01/2021 | 827,850.00 | | 827,850.00 |
| 10/01/2021 | 3,487,850.00 | | 3,487,850.00 |
| 04/01/2022 | 748,050.00 | | 748,050.00 |
| 10/01/2022 | 3,568,050.00 | | 3,568,050.00 |
| 04/01/2023 | 663,450.00 | | 663,450.00 |
| 10/01/2023 | 3,653,450.00 | | 3,653,450.00 |
| 04/01/2024 | 573,750.00 | | 573,750.00 |
| 10/01/2024 | 3,743,750.00 | | 3,743,750.00 |
| 04/01/2025 | 472,706.25 | | 472,706.25 |
| 10/01/2025 | 3,842,706.25 | | 3,842,706.25 |
| 04/01/2026 | 365,287.50 | | 365,287.50 |
| 10/01/2026 | 3,950,287.50 | | 3,950,287.50 |
| 04/01/2027 | 251,015.63 | | 251,015.63 |
| 10/01/2027 | 4,066,015.63 | | 4,066,015.63 |
| 04/01/2028 | 129,412.50 | | 129,412.50 |
| 10/01/2028 | 4,189,412.50 | | 4,189,412.50 |
| | 84,807,981.26 | 2,791,775.00 | 82,016,206.26 |

RESERVE FUND

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

Reserve Fund (RESERVE)

| Date | Deposit | Interest @ 4% | Principal | Balance |
|---|---|---|---|---|
| 10/01/2008 | 4,318,825 | | | 4,318,825 |
| 04/01/2009 | | 86,376.50 | | 4,318,825 |
| 10/01/2009 | | 86,376.50 | | 4,318,825 |
| 04/01/2010 | | 86,376.50 | | 4,318,825 |
| 10/01/2010 | | 86,376.50 | | 4,318,825 |
| 04/01/2011 | | 86,376.50 | | 4,318,825 |
| 10/01/2011 | | 86,376.50 | | 4,318,825 |
| 04/01/2012 | | 86,376.50 | | 4,318,825 |
| 10/01/2012 | | 86,376.50 | | 4,318,825 |
| 04/01/2013 | | 86,376.50 | | 4,318,825 |
| 10/01/2013 | | 86,376.50 | | 4,318,825 |
| 04/01/2014 | | 86,376.50 | | 4,318,825 |
| 10/01/2014 | | 86,376.50 | | 4,318,825 |
| 04/01/2015 | | 86,376.50 | | 4,318,825 |
| 10/01/2015 | | 86,376.50 | | 4,318,825 |
| 04/01/2016 | | 86,376.50 | | 4,318,825 |
| 10/01/2016 | | 86,376.50 | | 4,318,825 |
| 04/01/2017 | | 86,376.50 | | 4,318,825 |
| 10/01/2017 | | 86,376.50 | | 4,318,825 |
| 04/01/2018 | | 86,376.50 | | 4,318,825 |
| 10/01/2018 | | 86,376.50 | | 4,318,825 |
| 04/01/2019 | | 86,376.50 | | 4,318,825 |
| 10/01/2019 | | 86,376.50 | | 4,318,825 |
| 04/01/2020 | | 86,376.50 | | 4,318,825 |
| 10/01/2020 | | 86,376.50 | | 4,318,825 |
| 04/01/2021 | | 86,376.50 | | 4,318,825 |
| 10/01/2021 | | 86,376.50 | | 4,318,825 |
| 04/01/2022 | | 86,376.50 | | 4,318,825 |
| 10/01/2022 | | 86,376.50 | | 4,318,825 |
| 04/01/2023 | | 86,376.50 | | 4,318,825 |
| 10/01/2023 | | 86,376.50 | | 4,318,825 |
| 04/01/2024 | | 86,376.50 | | 4,318,825 |
| 10/01/2024 | | 86,376.50 | | 4,318,825 |
| 04/01/2025 | | 86,376.50 | | 4,318,825 |
| 10/01/2025 | | 86,376.50 | | 4,318,825 |
| 04/01/2026 | | 86,376.50 | | 4,318,825 |
| 10/01/2026 | | 86,376.50 | | 4,318,825 |
| 04/01/2027 | | 86,376.50 | | 4,318,825 |
| 10/01/2027 | | 86,376.50 | | 4,318,825 |
| 04/01/2028 | | 86,376.50 | | 4,318,825 |
| 10/01/2028 | | 86,376.50 | 4,318,825 | |
| | 4,318,825 | 3,455,060.00 | 4,318,825 | |

| | |
|---|---|
| Yield To Receipt Date: | 4.0000000% |
| Arbitrage Yield: | 6.0737153% |
| Value of Negative Arbitrage: | 1,028,941.54 |

RESERVE FUND

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

Capitalized Interest Fund (CAPI)

| Date | Deposit | Interest @ 2% | Principal | Scheduled Draws | Balance |
|---|---|---|---|---|---|
| 10/01/2008 | 2,750,449.83 | | | | 2,750,449.83 |
| 04/01/2009 | | 27,504.50 | 1,368,383.00 | 1,395,887.50 | 1,382,066.83 |
| 10/01/2009 | | 13,820.67 | 1,382,066.83 | 1,395,887.50 | |
| | 2,750,449.83 | 41,325.17 | 2,750,449.83 | 2,791,775.00 | |

| | |
|---|---|
| Yield To Receipt Date: | 2.0000002% |
| Arbitrage Yield: | 6.0737153% |
| Value of Negative Arbitrage: | 80,887.34 |

BOND SOLUTION

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

| Period Ending | Proposed Principal | Proposed Debt Service | Total Adj Debt Service | Revenue Constraints | Unused Revenues | Debt Serv Coverage |
|---|---|---|---|---|---|---|
| 10/01/2009 | | 2,791,775 | 2,791,775 | 2,240,121 | -551,654 | 80.24003% |
| 10/01/2010 | 1,525,000 | 4,316,775 | 4,316,775 | 7,130,551 | 2,813,776 | 165.18236% |
| 10/01/2011 | 1,585,000 | 4,315,775 | 4,315,775 | 10,708,548 | 6,392,773 | 248.12573% |
| 10/01/2012 | 1,665,000 | 4,316,525 | 4,316,525 | 16,936,723 | 12,620,198 | 392.36939% |
| 10/01/2013 | 1,750,000 | 4,318,275 | 4,318,275 | 16,661,473 | 12,343,198 | 385.83632% |
| 10/01/2014 | 1,835,000 | 4,315,775 | 4,315,775 | 5,911,195 | 1,595,420 | 136.96716% |
| 10/01/2015 | 1,925,000 | 4,314,025 | 4,314,025 | 6,061,542 | 1,747,517 | 140.50782% |
| 10/01/2016 | 2,025,000 | 4,317,775 | 4,317,775 | 2,925,823 | -1,391,952 | 67.76229% |
| 10/01/2017 | 2,130,000 | 4,316,463 | 4,316,463 | 8,554,285 | 4,237,822 | 198.17813% |
| 10/01/2018 | 2,245,000 | 4,316,975 | 4,316,975 | 5,331,141 | 1,014,166 | 123.49252% |
| 10/01/2019 | 2,370,000 | 4,318,500 | 4,318,500 | 5,331,141 | 1,012,641 | 123.44891% |
| 10/01/2020 | 2,510,000 | 4,316,300 | 4,316,300 | 5,331,141 | 1,014,841 | 123.51183% |
| 10/01/2021 | 2,660,000 | 4,315,700 | 4,315,700 | 5,008,888 | 693,188 | 116.06201% |
| 10/01/2022 | 2,820,000 | 4,316,100 | 4,316,100 | 4,642,679 | 326,579 | 107.56652% |
| 10/01/2023 | 2,990,000 | 4,316,900 | 4,316,900 | 4,192,230 | -124,670 | 97.11204% |
| 10/01/2024 | 3,170,000 | 4,317,500 | 4,317,500 | 3,778,848 | -538,652 | 87.52397% |
| 10/01/2025 | 3,370,000 | 4,315,413 | 4,315,413 | 3,138,667 | -1,176,745 | 72.73157% |
| 10/01/2026 | 3,585,000 | 4,315,575 | 4,315,575 | 2,608,133 | -1,707,442 | 60.43536% |
| 10/01/2027 | 3,815,000 | 4,317,031 | 4,317,031 | 1,950,848 | -2,366,184 | 45.18956% |
| 10/01/2028 | 4,060,000 | 4,318,825 | 4,318,825 | 1,416,652 | -2,902,173 | 32.80179% |
| | 48,035,000 | 84,807,981 | 84,807,981 | 119,860,629 | 35,052,648 | |

BOND SUMMARY STATISTICS

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

| | |
|---|---|
| Dated Date | 10/01/2008 |
| Delivery Date | 10/01/2008 |
| Last Maturity | 10/01/2028 |
| Arbitrage Yield | 6.073715% |
| True Interest Cost (TIC) | 6.189615% |
| Net Interest Cost (NIC) | 6.178796% |
| All-In TIC | 6.250639% |
| Average Coupon | 6.059699% |
| Average Life (years) | 12.633 |
| Duration of Issue (years) | 8.608 |
| Par Amount | 48,035,000.00 |
| Bond Proceeds | 47,773,400.20 |
| Total Interest | 36,772,981.26 |
| Net Interest | 37,495,717.06 |
| Total Debt Service | 84,807,981.26 |
| Maximum Annual Debt Service | 4,318,825.00 |
| Average Annual Debt Service | 4,240,399.06 |
| Underwriter's Fees (per $1000) | |
| Average Takedown | 7.500000 |
| Management Fee | 1.000000 |
| Other Fee | 1.100000 |
| Total Underwriter's Discount | 9.600000 |
| Bid Price | 98.495398 |

| Bond Component | Par Value | Price | Average Coupon | Average Life |
|---|---|---|---|---|
| Serial Bonds | 16,685,000.00 | 100.780 | 5.184% | 6.324 |
| Term Bond Due 2023 | 13,350,000.00 | 98.843 | 6.000% | 13.116 |
| Term Bond Due 2028 | 18,000,000.00 | 98.682 | 6.375% | 18.124 |
| | 48,035,000.00 | | | 12.633 |

BOND SUMMARY STATISTICS

Port Authority of Guam
2008 Revenue Bonds
Base Case - $40MM
20-Year Maturity, CAPI through 10/1/2009
Level DS

| | TIC | All-In TIC | Arbitrage Yield |
|---|---|---|---|
| Par Value | 48,035,000.00 | 48,035,000.00 | 48,035,000.00 |
| + Accrued Interest | | | |
| + Premium (Discount) | -261,599.80 | -261,599.80 | -261,599.80 |
| - Underwriter's Discount | -461,136.00 | -461,136.00 | |
| - Cost of Issuance Expense | | -240,175.00 | |
| - Other Amounts | | | |
| Target Value | 47,312,264.20 | 47,072,089.20 | 47,773,400.20 |
| Target Date | 10/01/2008 | 10/01/2008 | 10/01/2008 |
| Yield | 6.189615% | 6.250639% | 6.073715% |

END OF REPORT