

# PORT EXPANSION PLAN

**Port Authority of Guam  
PB International**



# Port Authority of Guam



## Vision

- to modernize the Port as a first class facility in the region providing cargo handling services in a safe, efficient & sustainable manner.

## Goal

- increase Port capacity
- execute required infrastructure development and Port expansion to meet military buildup and normal growth
- promote economic growth & opportunities for maritime related industries
- address port users needs



# Port Authority of Guam



- Largest U.S. deepwater port in the Western Pacific
- Only commercial seaport and main lifeline of all cargo entering Guam
- Handles 95% of the island's total imports (civilian & military)
- Full services to ocean vessels for loading and offloading cargo for Guam & Micronesia
- Transshipment hub for the entire Western Pacific Region



# Port Authority of Guam



- Contracted the services of PBI in August 2007 to update 1999 Master Plan
- Updates address future PAG expansion and development based on typical commercial growth and military buildup
- Needs assessments for military buildup are based on preliminary information of cargo volumes and personnel relocation provided by JGPO.
- Revised Master Plan to be complete by April 2008





# Port Authority of Guam



- Financial Feasibility Plan
  - Provide analysis of available funding options
  - Identify feasible options for optimal strategy
- Community Outreach Program
  - Consolidated and focused outreach for building consensus and commitment on the optimal strategy
- Implementation Plan
  - Detailed plan of action, indicating tasks, responsible party, and timelines for the execution of infrastructure development and equipment acquisition



## Collaborative efforts with Stakeholders

- Continue cohesive working relationship with Port Users and Administration
- Commitment from Governor/Lt. Governor & Legislature to support PAG endeavors
- Firm commitment from PAG to implement required developments
- Fast track priority projects

# **Port Authority of Guam Master Plan for Port Modernization**

**Prepared by PB International, Inc.  
February, 2008**



# History & Snapshot

- Navy Designed & Put in Service in Late 1960's
- Has Remained Largely Unchanged Since
- Ownership/Operations to Gov-Guam in 1970's
- Done its Job for Guam & Bases as Sole Gateway  
(Over 90% moves through Port)
- But Facilities are Considerably *Out of Date* for  
Modern Cargo Operations
- PBI has Substantially Completed Master Plan
- ***WILL NOT*** meet Marine Base Relocation Demands





Route 1

Piti Channel

Route 11

Commercial Port

Piti

Apra Harbor

Lockwood Terrace



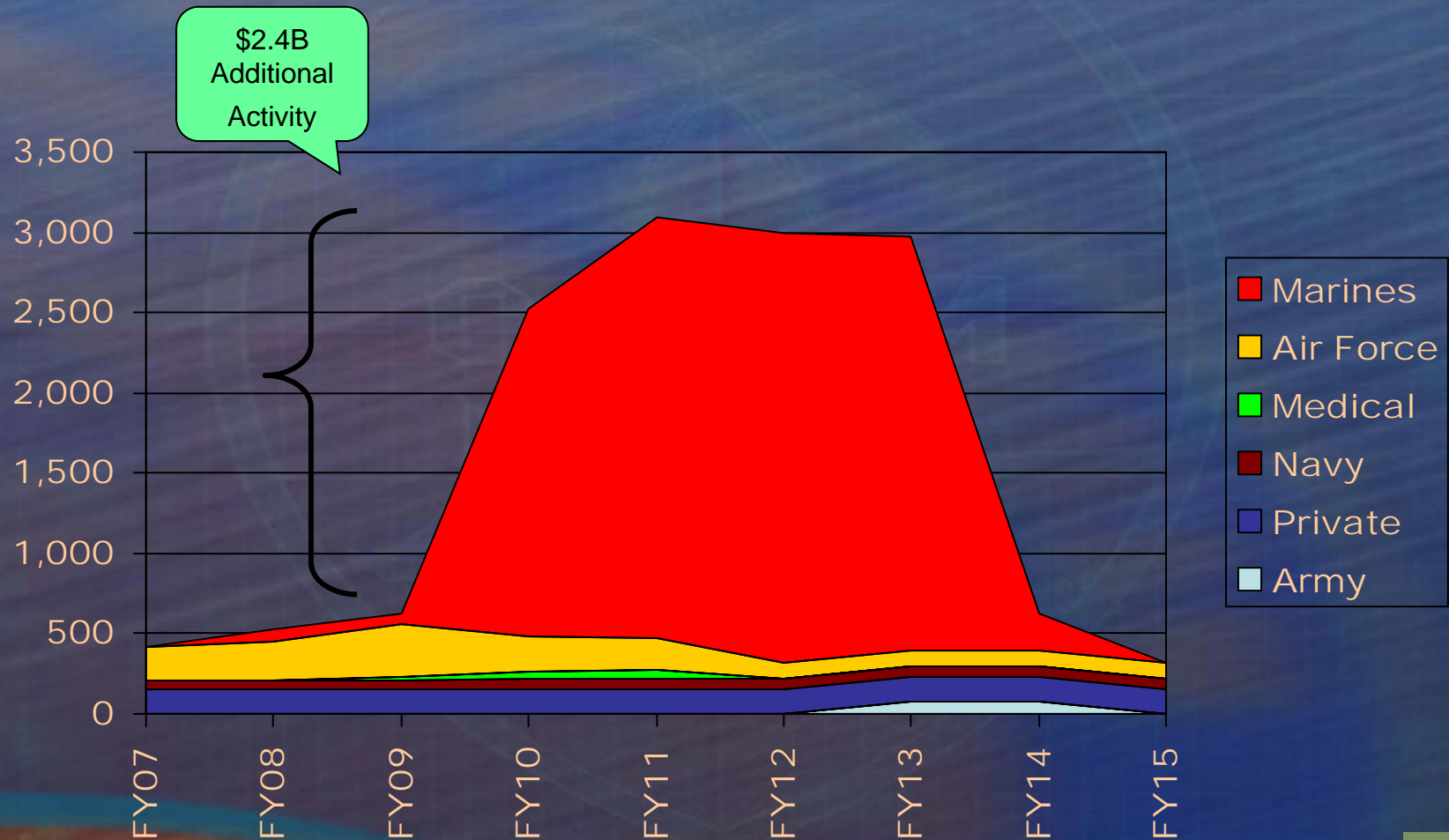
# Cargo Forecast

## *Framework for the Forecasts:*

- Transportation is a derived demand
- Population
- Employment & markets
- Major Drivers
  - Base Construction & 22% Population Increase
  - GovGuam Infrastructure Program

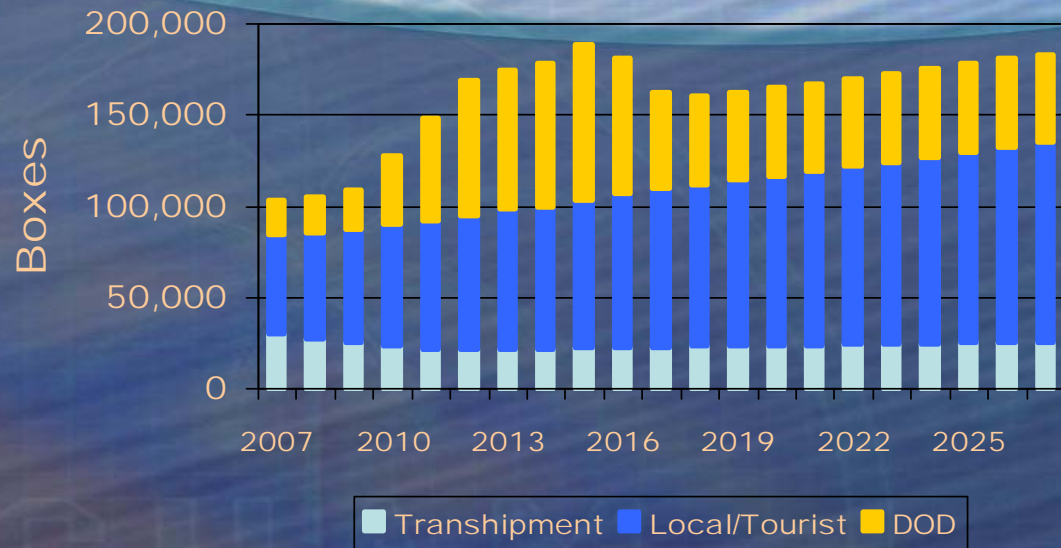


# DOD Guam Construction Activity (Millions 2007\$)

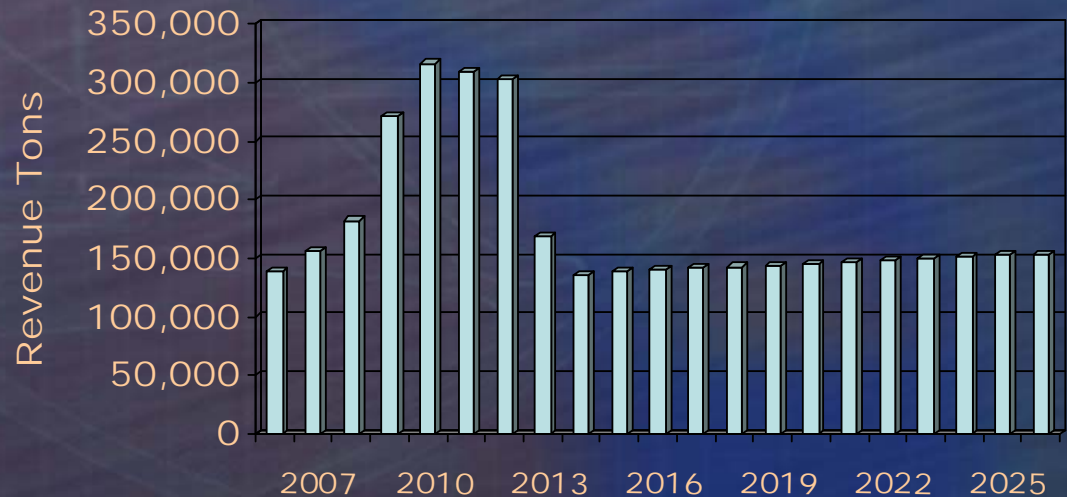


# Forecast

## Containers in Boxes



## Median Break-bulk Cargo



## Cement is Double or More



# Containers, Break-bulk & Cement

## *Annual Cargo:*

■ Containers:	103,000	Boxes in 2007
Est. Capacity	120,000	(current trade pattern)
Peak Demand	190,000	(200,000 high peak)
■ Break-bulk:	155,000	Tons Peak in 2006
Est. Capacity	Close to Capacity	
Peak Demand	320,000	Tons During Construction
■ Cement:	100,000	Tons in 2007
Est. Capacity	125,000	Tons
Peak Demand	250,000	Tons (Could range higher)
■ Cruise:	6 to 8	Vessels
Future Demand	25	Vessels if Successful
Liquid Fuels		Have Excess Capacity (Shell/Mobil)

# Design Ships

## Short Term (Base Relocation Driven)

Classification	TEU	LOA (Feet)	Draft (Feet)	Beam (Feet)	Width (Container)	DWT
Handy Size	2,200	640	33	93	11	25,000
Maunawili	2,600	712	41	105.6	13	37,752
Horizon Hunter	2,824	729	39	98	12	39,266
LMSR Military Vessel	N/A	950	37	105.6	N/A	34,000

## Long Term (Technology Driven - to be Deferred)






Classification	TEU	LOA (Feet)	Draft (Feet)	Beam (Feet)	Width (Container)	DWT
Post Panamax	4,800	900	45	135	16	90,000
Super Post Panamax	8,000	1,150	48	150	18	100,000



**BASE STORAGE DISTRIBUTION**  
 1318 Wheeled Slots  
 384 Full Grounded Slots  
 1188 MT Grounded Slots

**LEGEND**

- Wheeled Slots FEU
- Transshipment Containers
- MT: Empty Containers
- OOG: Oversized Containers
- Buildings To be Demolished

 **Wheeled Slots FEU**  
 **Transshipment Containers**  
 **MT: Empty Containers**  
 **OOG: Oversized Containers**  
 **Buildings To be Demolished**

- |                          |                                   |                                      |
|--------------------------|-----------------------------------|--------------------------------------|
| ① REEFER STORAGE         | ⑥ MAINTENANCE FACILITY            | ⑭ BREAK-BULK TERMINAL                |
| ② OOG STORAGE            | ⑦ YARD TRACTORS & BOMS            | ⑮ WHEELED STORAGE                    |
| ③ HAZARDOUS STORAGE      | ⑧ CART PARKING                    | ⑯ MT STORAGE                         |
| ④ TROUBLED TRUCK PARKING | ⑨ REGULAR PARKING                 | ⑰ GROUNDED STORAGE                   |
| ⑤ YARD GATE              | ⑩ OVERFLOW WHEELED STORAGE        | ⑱ FISHING VESSELS & CRUISE SHIP AREA |
| ⑥ OCR STATION            | ⑪ CIS & CUSTOMS                   | ⑳ EMERGENCY EXIT                     |
| ⑦ GUARD HOUSE            | ⑫ FUMIGATION AREA                 | ㉑ ACCESS TO FISHING & CRUISE BERTH   |
| ㉒ EXPAND ADMIN BUILDING  | ㉓ CRUISE PASSENGER BUS TURNAROUND |                                      |



# Selected for Implementation

- Considered Alternatives & Selected for Implementation
- Modernize & Expand 2,250 of Wharf & Dredge:
  - Existing Berth: -37' As Is
  - New Berth: -42' Now & -51' Future
- Apron & Container Crane:
  - Near Term: 50' PANAMAX Crane
  - Long Term: 100' Gage Post-PANAMAX
- Retain/Save Most Existing Buildings
- Minimize Disruption to Existing Operations
- Secure Yard per ISPS
- High-mount Yard Lighting, Paving & Utilities
- Expand Terminal for Peak Storage Demands



# Selected Concept Features (Cont'd)

- New, Efficient Truck Gates
  - Target: 3 Min. In / 1 Min. Out
  - Paperless Semi-automated Gates (OCR, Cameras)
  - Optimize Manning
- Break Bulk Storage Yard for Construction Peak
  - Rebar, Pipe & non-Containerized Project Cargo
  - Use for Military Deployment Exercises in Out Years
- Plan for Customs, Agriculture Inspection, Fumigation Etc.
- Cement: Dredging by Port / Other Private Sector

# Cargo Terminal Budget Estimates

ITEM DESCRIPTION		Budget Estimate
Mobilization and Demobilization		\$ 6,530,000
Miscellaneous Construction Excluded 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		\$ 8,990,000
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 Equipments		\$ 3,700,000
Terminal Operating System		\$ 2,500,000
Gates		\$ 2,500,000
		\$ -
<b>SUBTOTAL Direct Costs</b>		<b>\$ 137,500,000</b>
<b>Contingency</b>	<b>25%</b>	<b>\$ 34,500,000</b>
<b>Engineering/Permits/CM</b>	<b>15%</b>	<b>\$ 21,000,000</b>
<b>TOTAL</b>		<b>\$ 193,000,000</b>



# Immediate & Near Term Steps

- Perform Financial Feasibility Assessment & Identify Alternative Financial Scenarios
- Alternative Implementation Plans & Delivery Scenarios
- Site Characterization Program
- Environmental Analysis & Permitting
- Preliminary Engineering of Wharf Concurrent with Above
- Put in Place Mix of Financing/Funding/Tariff/Investment etc.
- Port Crane Procurement (in Progress as PMC due to Immediate Need)

# Preliminary Cash Flow Based on One Notional Schedule & Delivery Method

## ONE POSSIBLE SCHEDULE SCENARIO

