

STRATEGIC ASSET MANAGEMENT; AN EMERGING PORT MANAGEMENT IMPERATIVE

AAPA MARINE TERMINAL MANAGEMENT TRAINING PROGRAM
SEPTEMBER 19, 2012
BALTIMORE, MARYLAND

***Erik Stromberg
Port Management Consultant***

STRATEGIC ASSET MANAGEMENT—PAS 55 DEFINITION

“Systematic and coordinated activities and practices through which an organization optimally and sustainably manages its assets and asset systems, their associated performance, risks and expenditures over their lifecycles for the purposes of achieving its organizational strategic plan.”

PORT STRATEGIC INFRASTRUCTURE AM—A DEFINITION

- ***A business decision support process***
- ***Overarching focus on Port's mission***
- ***Methodology for prioritizing capital expenditures***
 - ***Defensible***
 - ***Auditable***
 - ***Repeatable***
 - ***Transparent***
- ***Based on a systematic and functionally integrated process***
- ***Across the entire enterprise***
- ***Supported by an improved understanding (data driven) of:***
 - ***Risk to the enterprise***
 - ***Asset value, performance, cost and risk over the life cycle of the asset.***
- ***PS: What it's not--Maintenance program (necessary but not sufficient)***

PUBLIC PORT MANAGEMENT CONTEXT: DO MORE WITH LESS

- **As a Commercial Enterprise**

- ***Meet bottom line expectations***
- ***Maximize ROI over an extensive, expensive and diverse asset portfolio***
- ***Invest to assure operationally efficient and fit-for-purpose facilities***
- ***Generate revenues to cover the cost of capital in a competitive, dynamic and difficult to forecast marketplace***
- ***In a cautious private capital marketplace***

- **As a Public Agency**

- ***Serve as responsible steward of public resources***
- ***Generate more jobs and economic opportunity***
- ***Meet additional ad hoc demands***
- ***In a public capital environment bereft of funds***

PORT ASSET MANAGEMENT CHALLENGES

- ***Aging infrastructure***
- ***Growing deferred maintenance account***
 - ***“ASCE’s “Failure to Act”***
- ***Suboptimal capital allocation process***
- ***Deficient data***
- ***Silo’d data and management processes***
- ***Run-to-failure maintenance program***
- ***Boomers retire--lost “institutional knowledge”***
- ***Uncertain level-of-service requirements***
- ***Loss of competitive edge and productivity***
- ***Safety /security concerns***

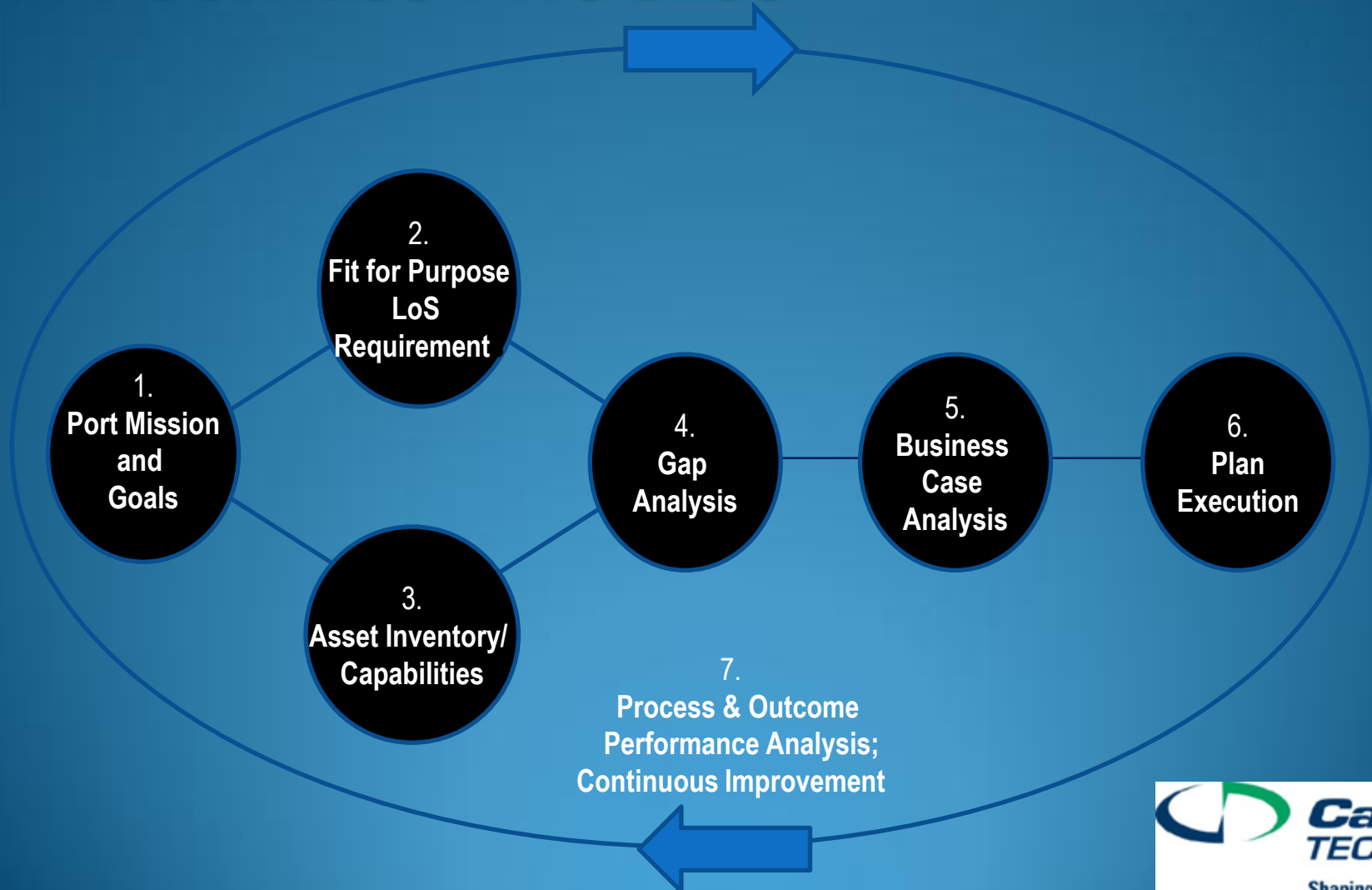
CAUSES DRIVE EFFECTS

- ***Suboptimal investment decisions***
- ***Unpleasant surprises***
- ***Higher than necessary repair and maintenance costs with longer down times***
- ***Reputation and position in both the trade and public eye***
- ***Due diligence hurdles***
- ***Lower employee morale—fixing same thing over and ...***

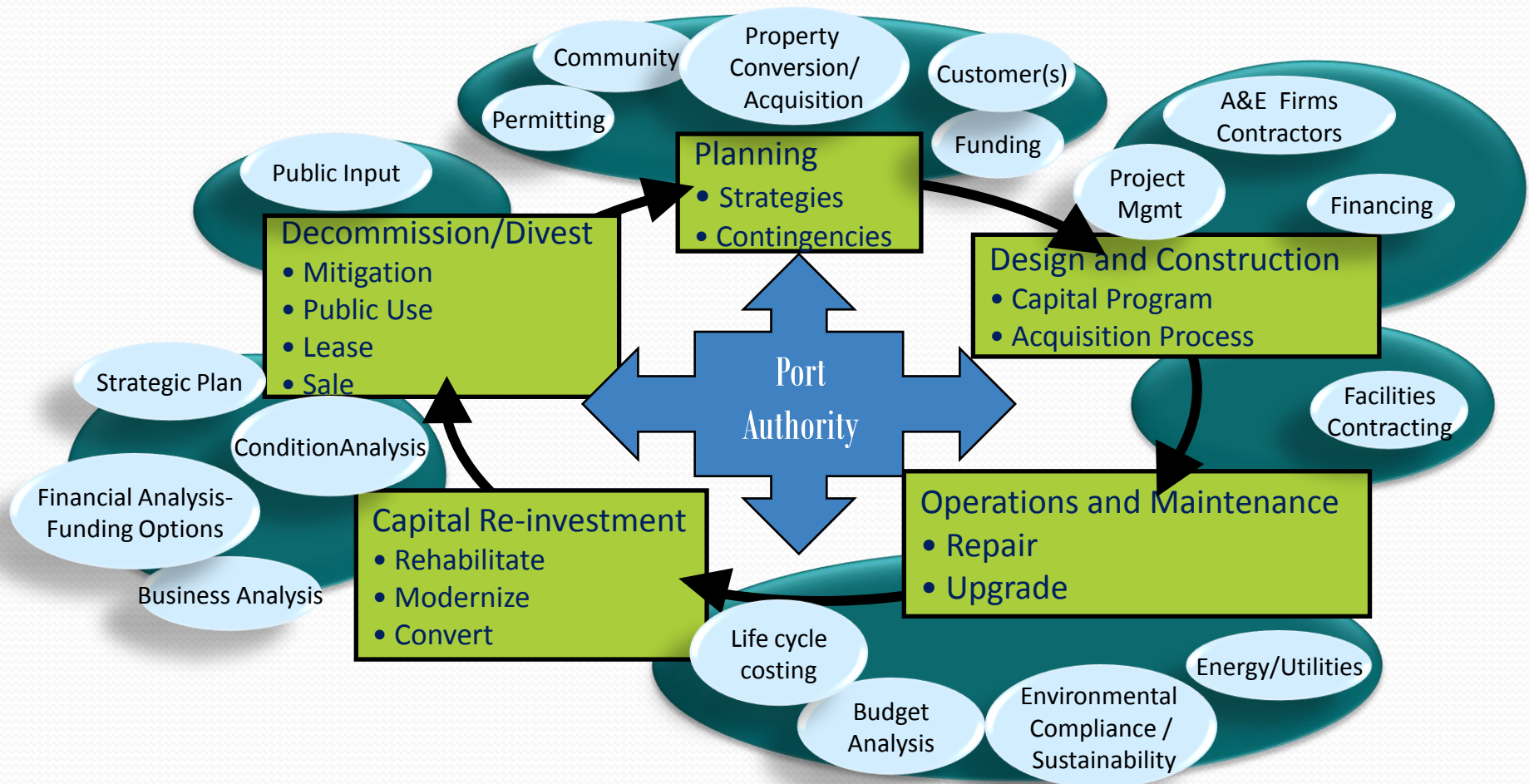
STRATEGIC ASSET MANAGEMENT-- BASIC QUESTIONS

- ***What is the inventory and condition of port “assets” critical to the port’s mission?***
- ***How can the port improve the way it currently is managing its assets?***
- ***Are current and planned initiatives and capital budgeting sufficient, or do they require modification, addition, or redirection?***
- ***What approaches have worked well with other ports and other industries, and which are most appropriate for your port?***

STRATEGIC ASSET MANAGEMENT— A BUSINESS PROCESS



Asset Management; Life Cycle Resource Planning



ASSET MANAGEMENT RELATED STRATEGIC GOALS

Lower long-term costs for infrastructure preservation

Improved performance and service to customers

Improved cost-effectiveness and use of available resources

A focus on performance and outcomes

Improved credibility and accountability for decisions and expenditures.

ASSET MANAGEMENT: SPORT METAPHOR

- **PLAYBOOK — TOP DOWN SUPPORT:**

- **AGREEMENT ON ORGANIZATIONAL MISSION AND GOALS AND WHAT THAT MEANS TO EACH DEPARTMENT**

- **BLOCKING AND TACKLING — BUSINESS PROCESS FOCUS:**

- **COMMUNICATION –DATA FLOWS ACROSS DEPARTMENTS**
- **COMMON UNDERSTANDING AND DEFINITIONS**
- **MOST OF THE NECESSARY KNOWLEDGE AND EXPERIENCE IS CURRENTLY IN PLACE AT YOUR PORT (NO NEED FOR HIGH DRAFT PICKS!)**
- **TECHNOLOGY SUPPORTS, NOT LEADS**

WHO'S DOING STRATEGIC AM?

- ***US Public Infrastructure Owners***

Federal Government: USCG, DoD, GSA, National Park, NASA, FHWA

State DOTs

Municipalities: Portland Oregon

Public Enterprise: Utilities, Airports, Universities

- ***Canadian Public Infrastructure Owners***

Federal: St. Lawrence Seaway Authority

Provincial: Quebec Ministry of Transportation

Municipalities: Montreal Quebec

- ***Private Sector***

- ***Railroads—NS***

- ***Johnson & Johnson***

- ***International seaports—Port of Melbourne Corp, Port of Rotterdam***

- ***North American seaports—Collaborative AM program***

Port of Melbourne Corp



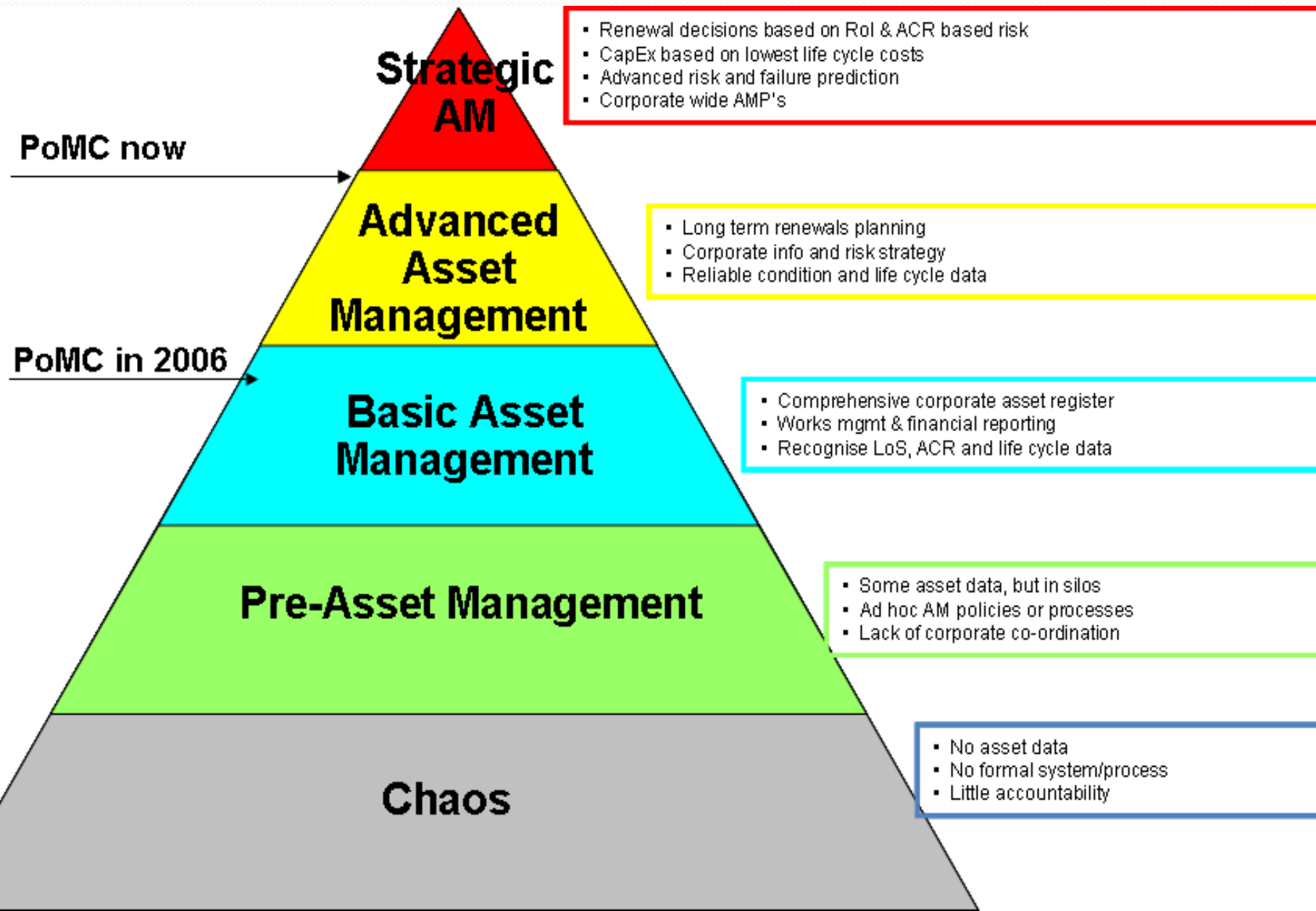
- **Asset replacement value : AU\$1.8 billion.**
- **Asset renewals, rehab and maintenance: \$60–65 millionlyr**
- **Maintenance dredging: \$7 millionlyr**
- **Asset management process improvement—2008 start.**

STRATEGIC AM at POMC

- **Key deliverables:**

- **Develop asset renewal forecasts based on age, condition, level of service and risk.**
- **Develop life cycle planning processes so as to understand and predict total cost of ownership.**
- **Understand asset risk exposure and its influence on maintenance and renewal forecasting.**
- **Develop optimized renewals decision-making processes so as to reliably determine optimal treatments and associated timings.**
- **Embed asset management as a core business discipline within the business.**

Maturity Pyramid--POMC



AAPA PORT COLLABORATION TO DEVELOP SAM: 2011/12

- ***Port Metro Van BC***
- ***Port of Portland***
- ***Port of Oakland***
- ***Port of Houston***
- ***NC State Ports Authority***
- ***Maryland Port Administration***
- ***Port of Tacoma***
- ***PANYNJ***

COLLABORATIVE SAM OBJECTIVES

- 1. Common understanding of strategic asset management.***
- 2. Global best practices and lessons learned.***
- 3. Performance metrics/level of service definitions.***
- 4. Risk based strategies to prioritize capital investment.***
- 5. Monitor and measure the success.***
- 6. Steps required to develop SAM “road map”.***

PORT OF TACOMA; ENTERPRISE AM PROGRAM (5/12)

- 1. Financial stability through enhanced understanding of asset conditions, better forecasting of life-cycle costs, reduced frequency of emergency repairs and the achievement of acceptable Returns on Assets (ROA);**
- 2. Modernization of the Port's assets based on strategic, informed and timely reinvestment decision-making;**
- 3. Customer satisfaction and improved competitiveness through preservation of mission-critical and high-margin asset values, service levels and operating efficiencies;**
- 4. Organizational alignment through improved internal processes and a shared understanding of asset reinvestment priorities; and,**
- 5. Reduced risk of loss and improved life safety through better preventive maintenance, early hazard detection and timely corrective action.**

INERTIA STILL REIGNS-- REASONS GIVEN FOR WHY NOT

- ***Corporate culture***
 - ***“What’s the problem?”***
 - ***You gotta problem with me (or my department)?***
 - ***What do we want?***
 - ***Where to start?***
 - ***But, we’re all too busy to take on something else!”***
- ***“AM is on the front burner, and it sits there with 20 other front burner issues”***
- ***“This is going to be too expensive!”***
 - ***Consultants oversell or miss target***

TAKE AWAYS.....

- ***AM issues will not go away-- solutions will not be easier or cheaper over time***
- ***Pick a goal and get started***
- ***Don't let best get in the way of the good!***

PORT RELATED RESOURCES

•AAPA:

- Collaborative Program Involving US and Canadian Ports***
- Facilities Engineering Subcommittee on AM***
- AAPA Web site: "Issues and Advocacy--Best Practices in AM"***
- AAPA Infrastructure Survey***

•TRB--Ports and Channels Committee, AM S/C:

- ACRP 69—Asset and Infrastructure Management for Airports***
- AM Best Practices: 2013 TRB Annual Meeting***

ASCE:

- Ports and Harbors Cte--Asset Management Task S/C***
- Port Infrastructure Report Card—"Failure to Act"***

•AASHTO—Transportation AM Guide

•FHWA—Fundamentals of Asset Management

•PIANC: InCom Report of WG 25

•NAMS (NZ AM Standards):

- International Infrastructure Management Manual (IIMM)***
- Optimised Decision Making Guidelines (ODMG)***

INTERACTIVE DISCUSSION—YOUR QUESTIONS AND THOUGHTS

- 1. Based on the maturity pyramid? (from “chaos to strategic”), where does your port fit?***
- 2. Do you see this management initiative as important, relevant, timely and actionable?***
- 3. If you don’t think it’s important, either in absolute terms or relative to other port priorities, why not?***
- 4. If you think it’s important, what constraints exist and how to overcome?***
- 5. What else should AAPA be doing in this area?***

Technology tools

GIS/BIM/CAD Software

- ArcView/ArcGIS
- AutoCAD
- Revit
- Microstation
- LUSAD
- Archibus
- InfoWATER

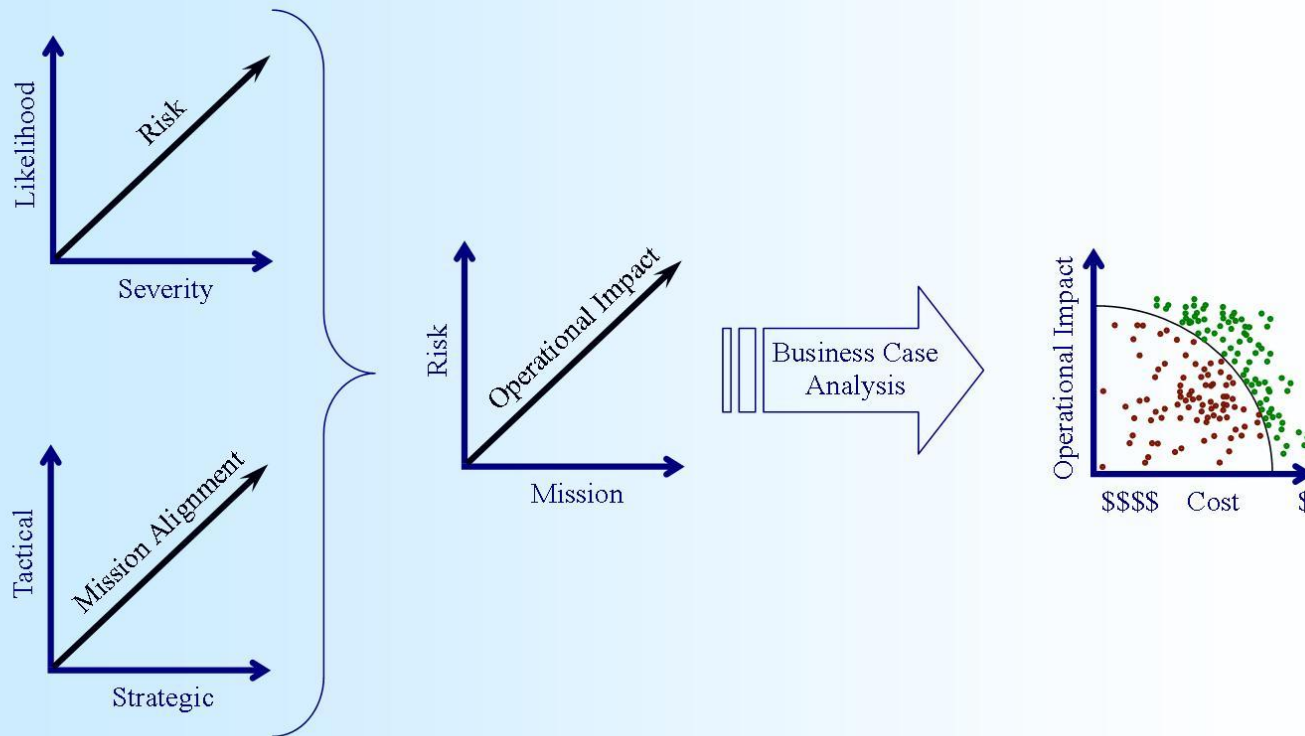
CMMS/Business Management Software

Maximo®
PWTools™
SAP
MainSaver
PropWorks (RAMS)
Avisoft
ACES (US Air Force)
IFMS (US Army)
iNFADS (US Navy & USMC)

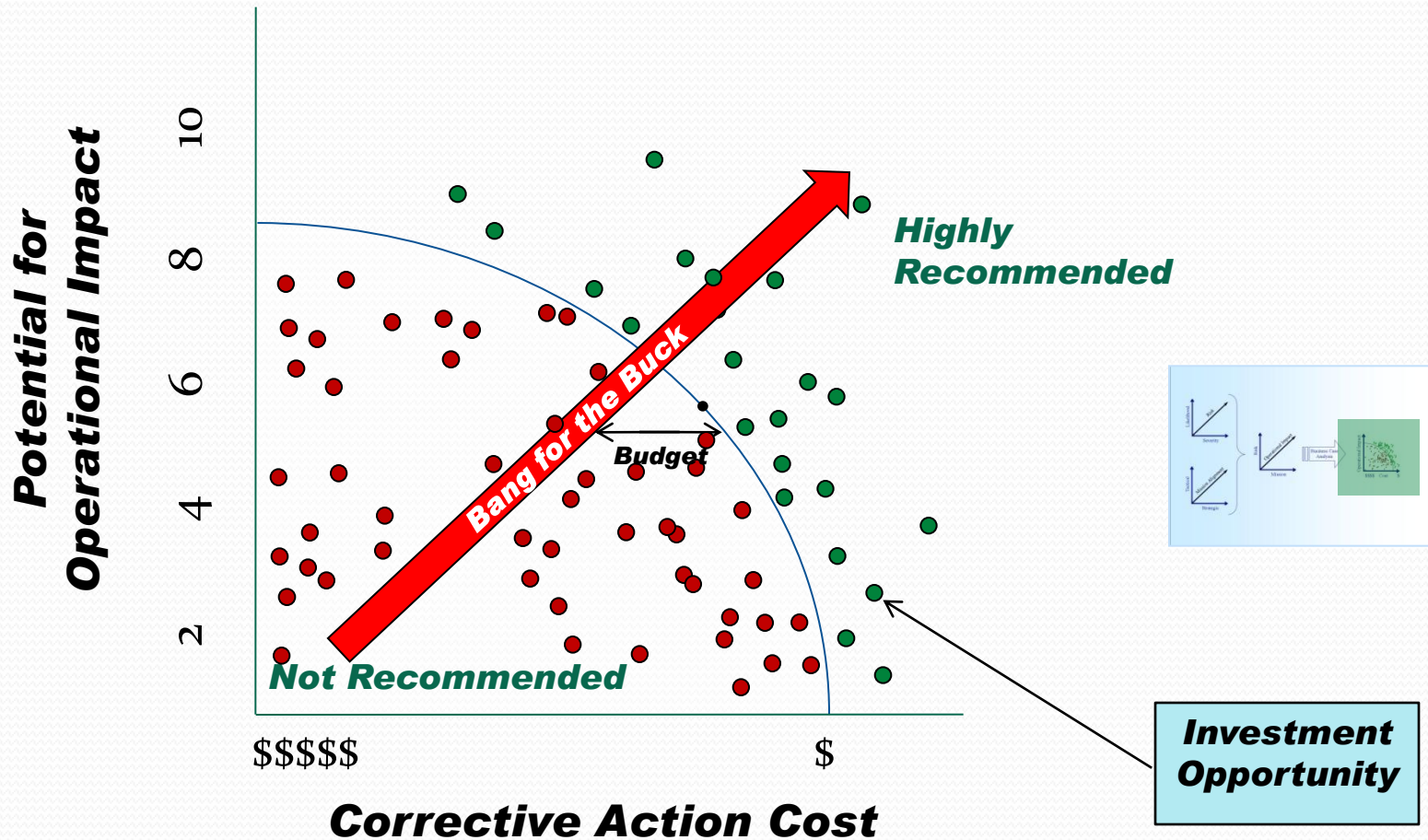
Facility Assessment Software Tools

VFA.Facility
Vertex™
Builder™
MicroPaver™
Roofer™
Railer™
TECfms™
Whitestone Research MARS™
NASA Deferred Maintenance Model

Evaluation of Risk to Mission: US Coast Guard



Evaluation of Risk to Mission— Business Case



AAPA Economic Development Seminar

Strategic Asset Management

July 12, 2011



PORT OF OAKLAND

Maritime Division



WHAT SAM WILL DO FOR THE PORT OF OAKLAND

- ***Asset inventory***
- ***Age, condition, and replacement cost***
- ***Risk assessment strategy to upgrade, replace, or expand***
- ***Decision making tool for senior management and the Commission***



PORT METRO
vancouver

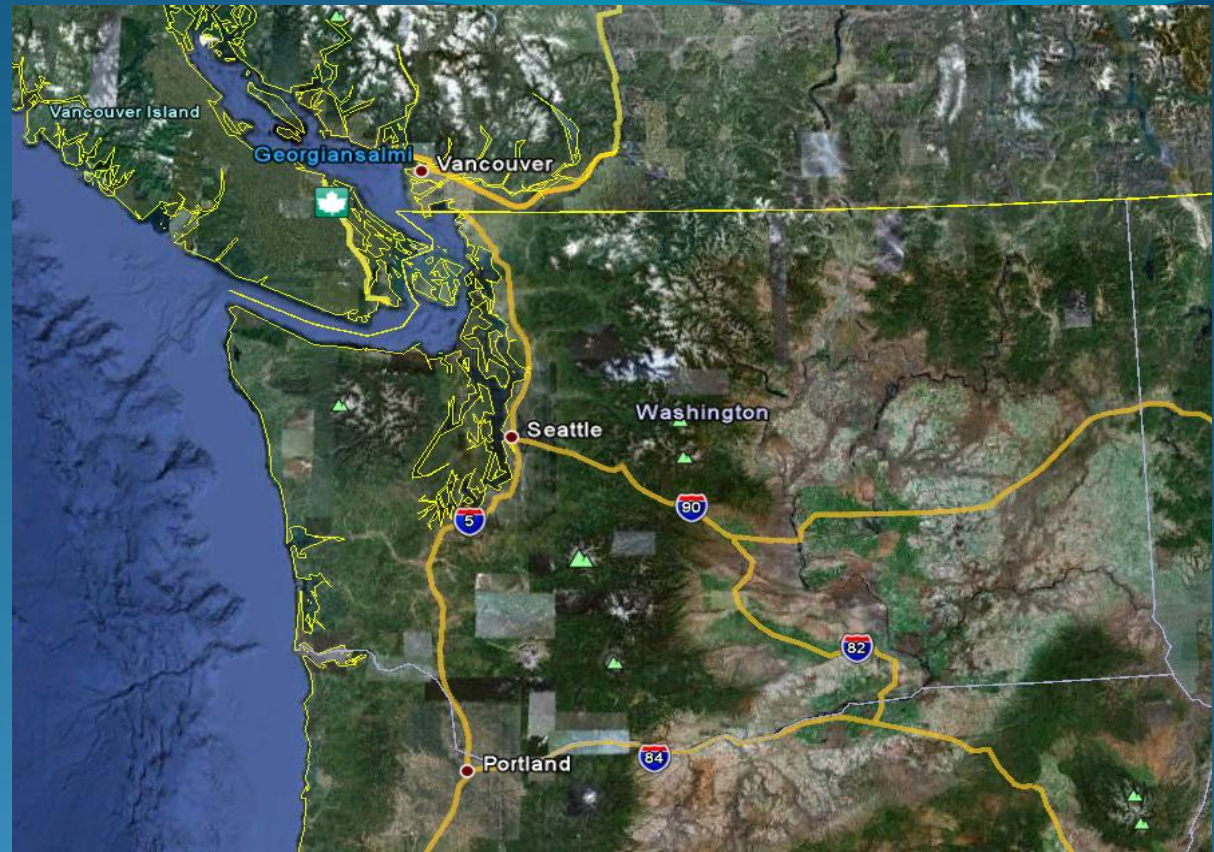
Infrastructure Asset Management at Port Metro Vancouver

Gary M. Tosh

A.M. Coordinator
Engineering Dept.

July 12, 2011

PMV



- ***Largest, busiest and most diversified port in Canada***
- ***Handled 118 million tons of cargo in 2010***
- ***28 major marine cargo terminals and 3 Class 1 railroads***
- ***600 km (373 miles) of shoreline, bordering on 16 municipalities***

AM at PMV

- ***Prior to 2005, no AM program existed***
- ***Infrastructure assets were inspected based on:***
 - ***Random observations***
 - ***Accident reports***
 - ***Intuition***
- ***In 2005 an engineer with AM experience was hired with the secondary goal of starting an AM program***
- ***Program started in 2008***

CURRENT STEPS AT PMV

Level 1 condition inspection.

High level visual inspection

682 assets to be inspected by end of 2012.

Level 3 condition assessments.

In-depth engineering evaluation

Yearly budget of \$300,000/year

Top down AM Directive

Levels of Service Requirements

Software needs analysis

Appendix

Maturity Pyramid--POMC

