

**STRATEGIC ASSET MANAGEMENT;
AN EMERGING PORT
MANAGEMENT IMPERATIVE**

**AAPA COMMISSIONERS SEMINAR
PORT EVERGLADES
JUNE 4, 2013**

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Senior Port Advisor**

Agenda

- What is Strategic Asset Management?
- Why is it important?
- Lessons learned/best practices regarding asset management program development.
- **Key words to keep in mind:** *Asset value, life-cycle costs, risk to mission, required level of service, deferred maintenance account*

Cardno TEC

Cardno Locations



CARDNO TEC

- Subsidiary of Cardno Australia, providing consulting expertise in engineering, environmental management, architecture, planning, and infrastructure management
 - Port and Transportation Planning
 - Asset Management
 - Environmental Management

What is Strategic Asset Management?

Publicly Available Specification—PAS 55 2008

“ 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.”

STRATEGIC ASSET MANAGEMENT

- *A business process*
- Focused on the Port's *mission*
- Methodology for prioritizing capital expenditures
 - *Defensible*
 - *Auditable*
 - *Repeatable*
 - *Transparent*
- Through a systematic and functionally integrated process, across the *entire enterprise*
- Supported by a *data-driven* understanding of:
 - Asset value
 - Performance metrics
 - Life cycle cost
 - Risk

- PS: It is *not* a maintenance program (necessary but not sufficient)

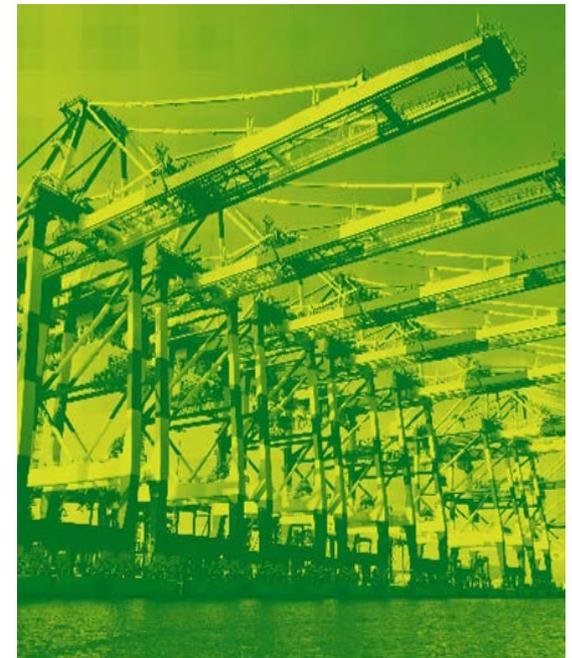
ASSET MANAGEMENT STRATEGIC GOALS

- Focus on performance and outcomes linked to organization's mission and goals
- Improved credibility and accountability for decisions and expenditures
- Improved cost-effective use of available resources
- Lower long-term costs for infrastructure preservation

Why is Port Asset Management Important?

Overview:

- More than 95% (by volume) of overseas trade produced or consumed by the United States moves through our ports.
- To sustain and serve a growing economy and compete internationally, our nation's ports need to be maintained, modernized, and expanded.
- Port authorities and their private sector partners have planned over \$46 billion in capital improvements from now until 2016
- However, federal funding has declined for navigable waterways and landside freight connections needed to move goods to and from the ports.



1. INCREASE
LEADERSHIP IN
INFRASTRUCTURE
RENEWAL

2. PROMOTE
SUSTAINABILITY
AND RESILIENCE

3. DEVELOP AND
FUND PLANS TO
MAINTAIN AND
ENHANCE AMERICA'S
INFRASTRUCTURE



Innovations in Asset Management

Maritime Economic Development Seminar

July 11-13, 2011

Portland, OR

Butch Wlaschin, P.E.
Director, Office of Asset Management
Federal Highway Administration



National Perspective and Need

1. Develop a risk-based, data-driven program
2. Assess the effectiveness of current management methodologies and tools
3. Assess the effectiveness of current preservation and maintenance strategies
4. Maximize the benefits of systematic preventive maintenance
5. Examine preservation procedures that lead to improved operational performance
6. Examine strategies, innovations and technologies
7. Support R&D
8. Protect the investment



What are we doing?

- Transportation
 - Highways
 - Transit
 - Aviation
 - Rail
 - Ports?



TRANSPORTATION

RESEARCH BOARD

Report 69

TRB

Asset and Infrastructure Management for Airports

June 2012

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Main Findings

- An holistic approach to asset management helps infrastructure managers to:
 - Do more with less
 - Identify and manage risks to the business
 - Make better investment decisions
 - Extend asset life, reduce downtime, achieve better control over performance
 - Align decision makers to a common purpose
 - Respond more easily to changes in the regulatory and commercial environment

Examples:

- 13.5% increase in pavement life
- Pavement levels of service maintained with 30% reduction in budget

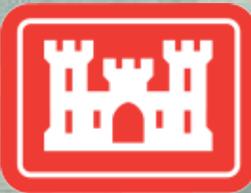
Aviation Planning, Seattle-Tacoma International Airport, “Asset Management is a planned and proactive strategy for optimizing the life of vital facilities. The business management practices are based on total cost of ownership for ongoing renewal, maintenance and operation. They are a source of competitive advantage and critical to the long term stewardship of airport infrastructure”

Budget Allocation for Dredging Project Selection to Maximize Waterway System Capacity Improvement

Kenneth Ned Mitchell, PhD
U.S. Army Engineer Research and Development Center
Vicksburg, Miss.

Dr. Bruce Wang & A. Khodakarami
Texas A&M University

TRB Annual Meeting
January 14th, 2013
Washington, D.C.



US Army Corps of Engineers
BUILDING STRONG[®]

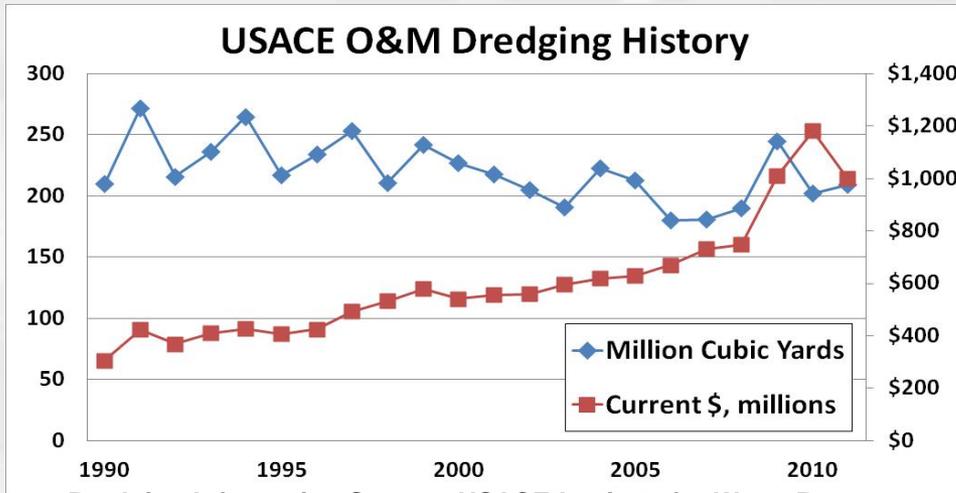


Limited O&M Funding

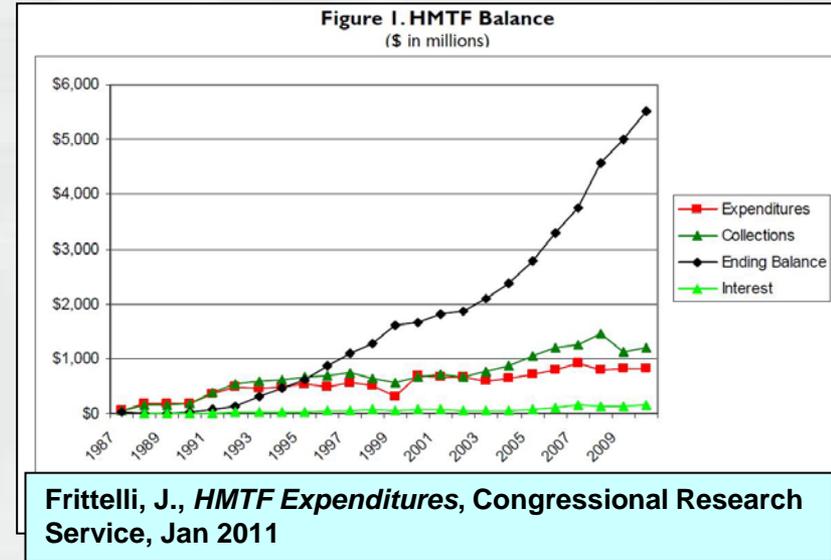
- Fiscal constraints are forcing the Corps to make difficult decisions concerning allocation of limited Operations and Maintenance (O&M) funds across the vast portfolio of coastal and inland navigation projects.
- This is driving the push towards system-based asset management to ensure that limited resources are optimally distributed and benefits to the Nation are maximized.



Need for Navigation Asset Management



Source: Dredging Information System, USACE Institute for Water Resources



Frittelli, J., *HMTF Expenditures*, Congressional Research Service, Jan 2011

At least \$X in Avg. annual O&M funding	# of Navigation projects
\$10M	34
\$1M	190
\$100k	448
\$10k	669
\$1k	797

abc 57 News 41° Wind: 18 MPH Clear

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LOCAL REGIONAL NATIONAL CONSUMER BUSINESS CRIME POLITICS TECHNOLOGY HEALTH ENTERTAINMENT

Lake Michigan's low levels affecting shipping industry

By Danil Blinzev

TOOLS: EMAIL THIS ARTICLE, Like 3, Tweet, DIGG, PRINT THIS ARTICLE

Project View versus System View

Rank-ordered project evaluation with cut-off line for funding often does not capture project-performance interdependencies...

Defunding of small projects could lead to reductions in performance of large projects as well, regardless of their receiving maintenance funds.

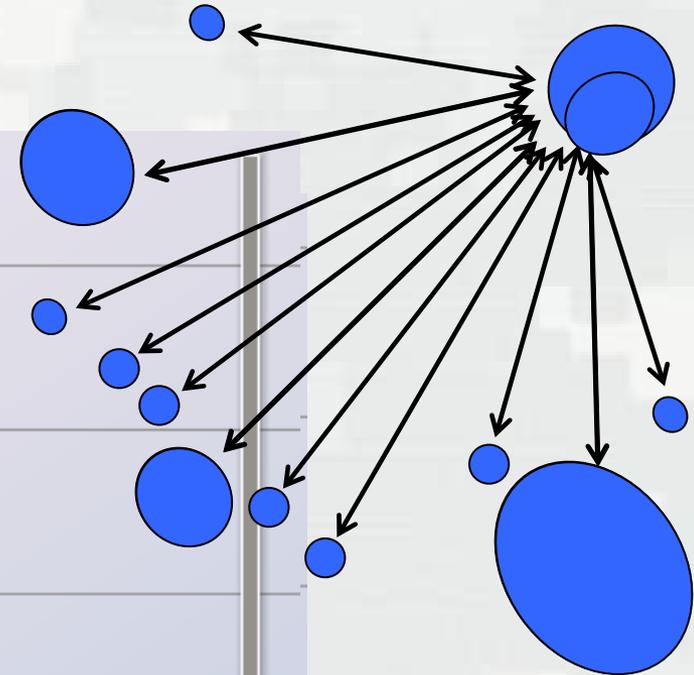
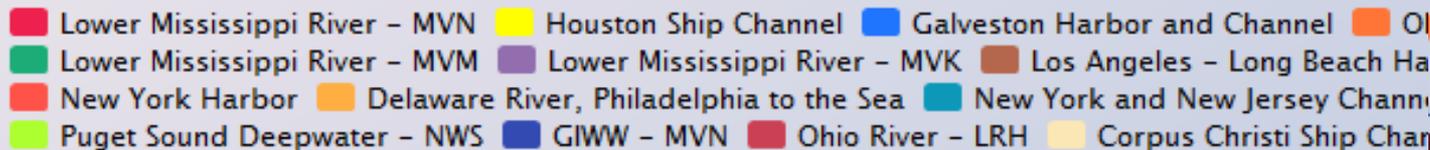
Tons (x1k)

500k

250k

0k

Project



PORT ASSET MANAGEMENT CHALLENGE: DO MORE WITH LESS

- **Aging infrastructure**
- Excessive deferred maintenance account
- Run-to-failure maintenance program
- **Inadequate capital resources**
- Suboptimal capital allocation processes
- **Uncertain level-of-service requirements**
- **Deficient data** — not enough, not the right kind, not in the right place (silo'd)
- **Loss of “institutional knowledge”**—out-the-door retiring “Boomers”

WHICH LEAD TO:

- Unpleasant surprises
- Questionable investment decisions
- Higher than necessary repair and maintenance costs with longer down times
- Lowered reputation and position in both trade and public eye
- Due diligence hurdles
- Lower employee morale (fixing same thing over and ...)

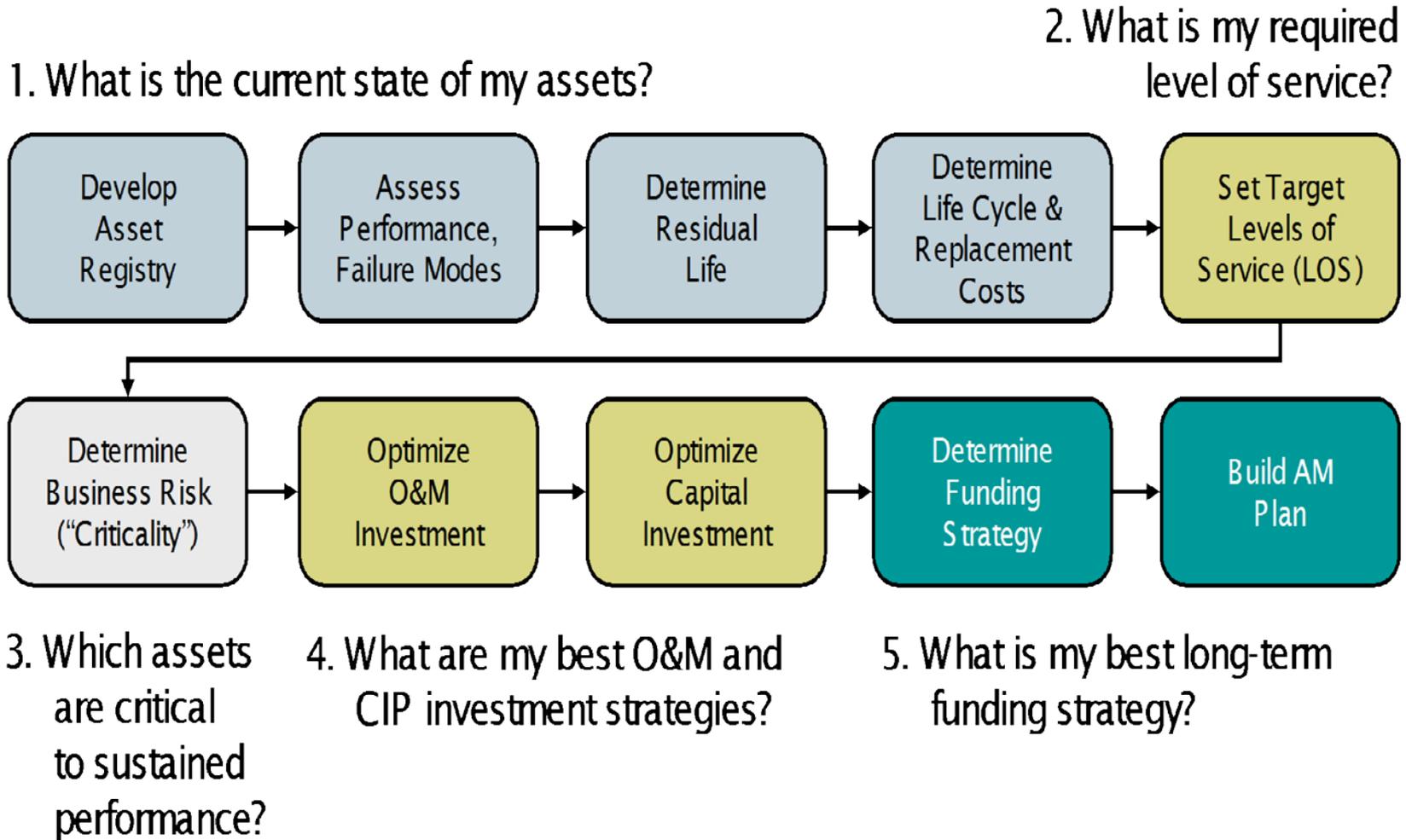
Approaches to SAM Program Development

An Asset Management Approach

- What Assets do we own?
- What condition are they in?
- What level of service is expected?
- What are the funding sources?
- How do we allocate resources to protect or extend the life of the assets?
- Do we have a ‘whole life approach’?



ACRP 69 Airport Primer and Guidebook; Asset Management Plan Development

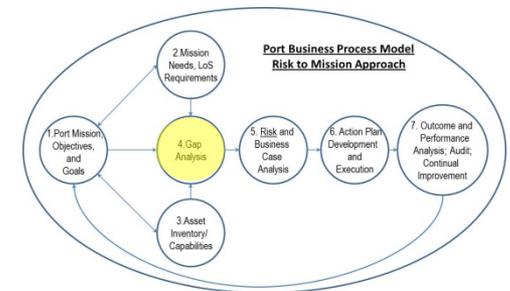
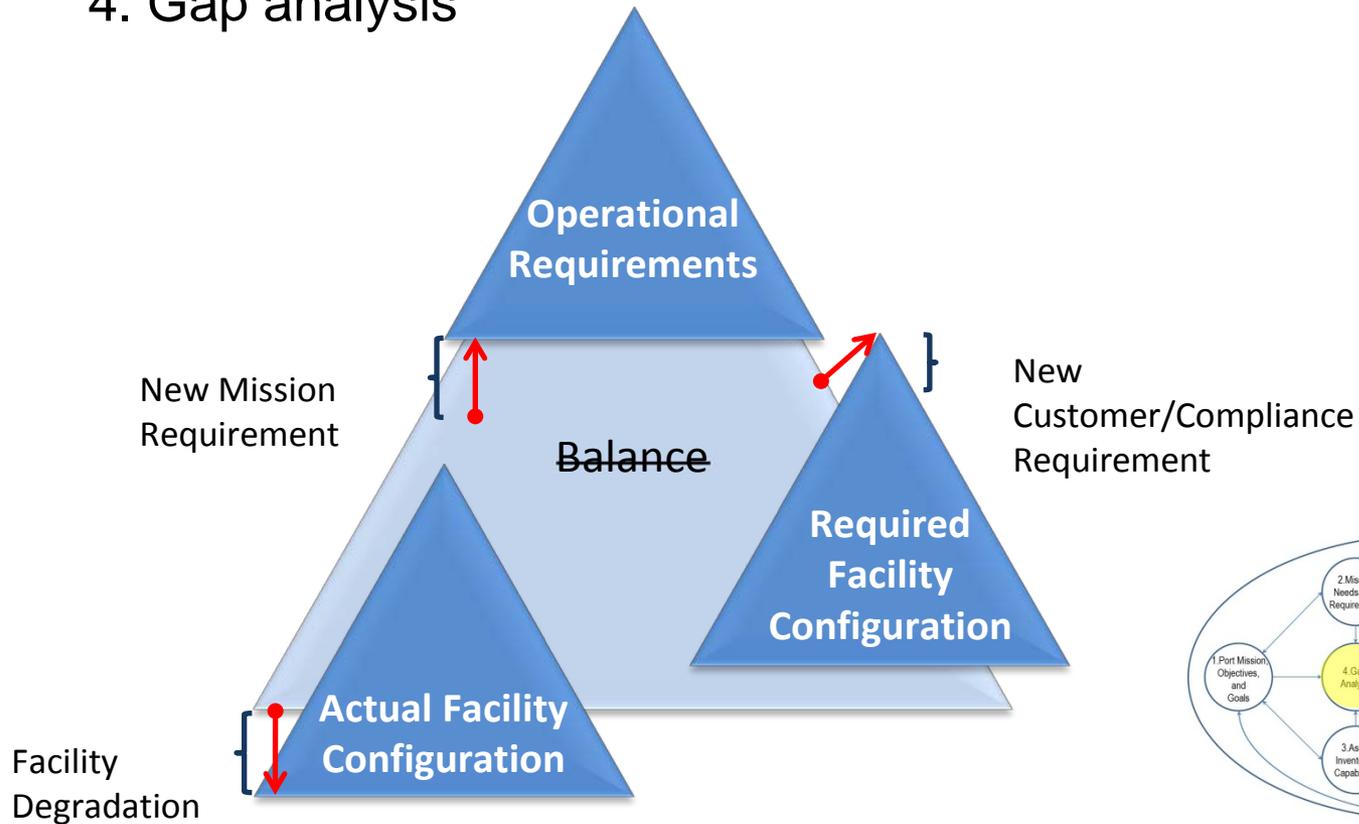


BUSINESS PROCESS MODEL IN A STRATEGIC ASSET MANAGEMENT FRAMEWORK

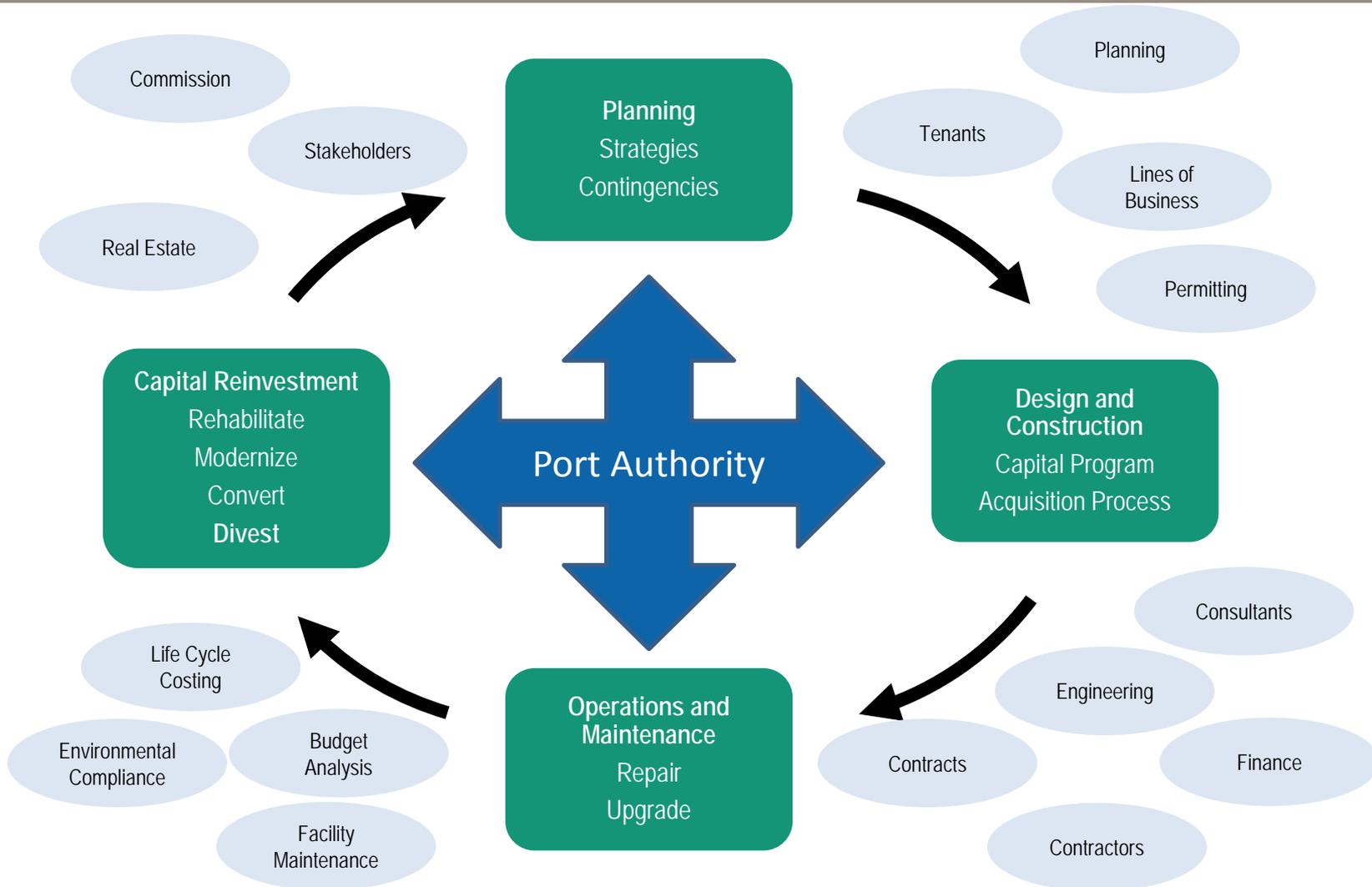


Valid Investments

4. Gap analysis



ASSET LIFE CYCLE



AM LIFECYCLE—”CONNECTING THE DOTS”



Port of Melbourne Corporation, Australia-- Best in Class

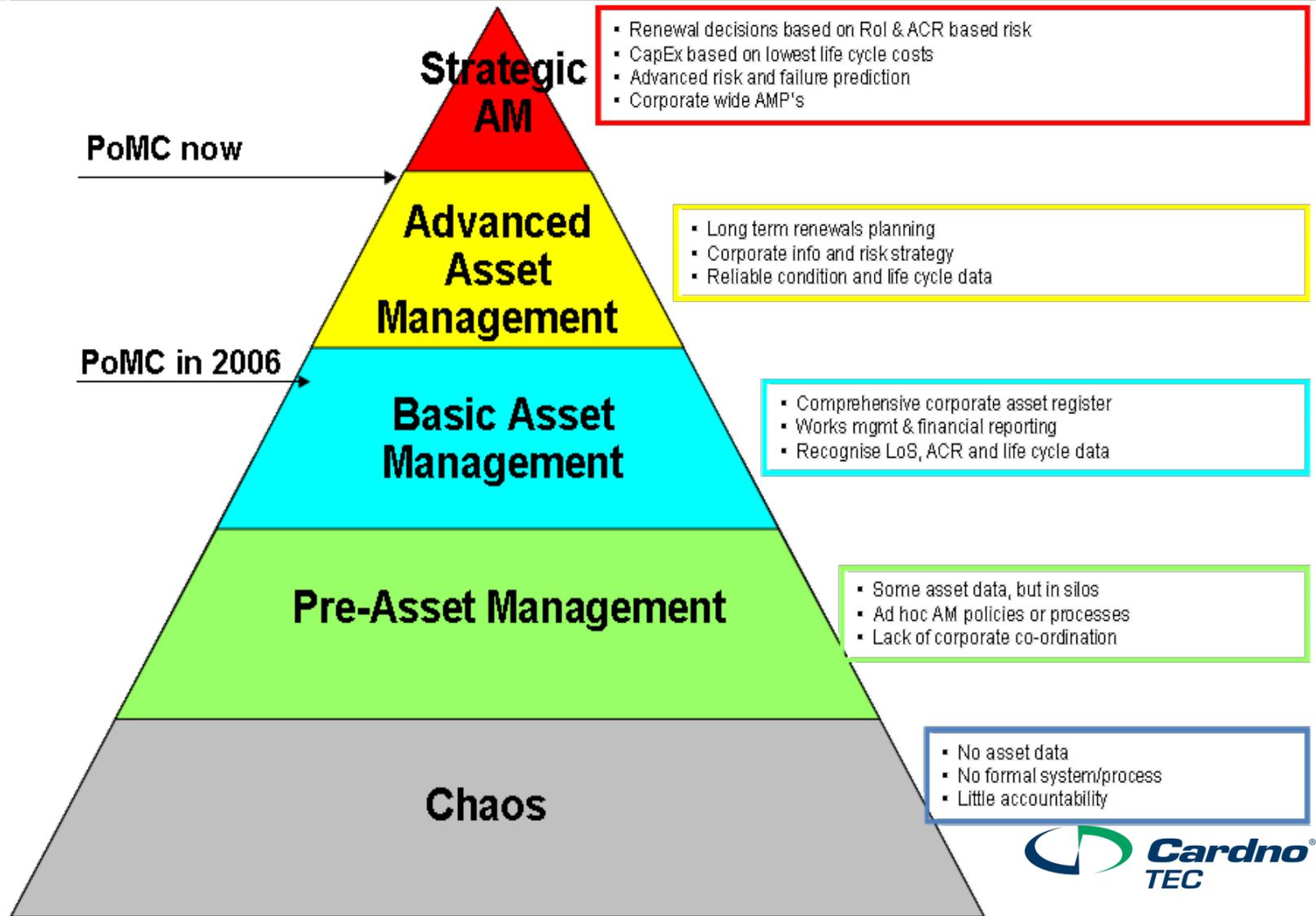
- **Goal:** Provide defined level of service across entire asset portfolio in the most cost effective manner for the benefit of customers, investors and other stakeholders



STRATEGIC AM at POMC

- **Drivers:**
 - Increasing portfolio of ageing and expensive assets
 - Worsening asset conditions = increased risk
 - Understand future renewal expenditures
 - Direct funds to assets in greatest need
 - Optimise renewals decision making processes
 - Develop Asset Management Plans for key assets and asset classes
 - Embed asset management as a core business discipline

Maturity Pyramid — POMC





Asset Management Program Development

April 18, 2013

Strategic Plan



GOAL 1: ENHANCE THE PORT'S COMPETITIVE POSITION

Improve Port Business Assets to Meet Market Demand

1) Redevelop the General Central Peninsula and other terminal complexes to increase container throughput and respond to container industry changes

**2) Develop and implement a Strategic Asset
Management Program**

Desired Benefits



1. Financial stability.
2. Customer satisfaction and improved competitiveness.
3. Modernization of the Port's assets.
4. Organizational alignment through improved internal processes.
5. Reduced risk of loss and improved life safety.

Background



“The Port recognizes it must monitor the condition of its assets, know where to reinvest for the greatest good and improve its understanding and control of asset life cycle costs.”

Criteria Development



1. Create an objective, standardized, credible, repeatable process to guide our decision-making relative to asset reinvestments.
2. Provide organizational focus and alignment - - on problems, not projects.
3. Subject to change.

Risk Rating Factors

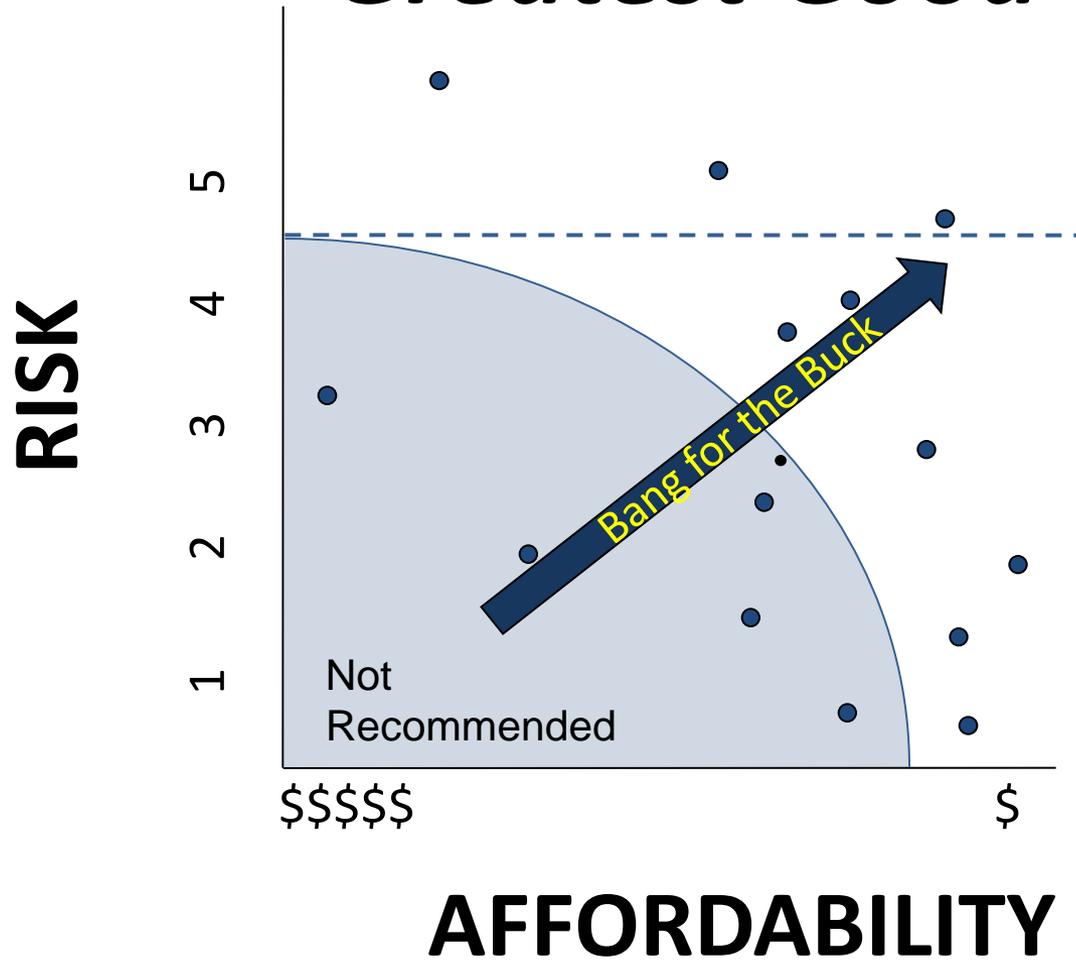
- Contractual Obligations
- Compliance Requirements
- Revenue Preservation
- Long-Term Planned Use
- Hidden Costs
- Redundancy
- Customer Satisfaction
- Stewardship
- Reputation
- Urgency

Desired Information

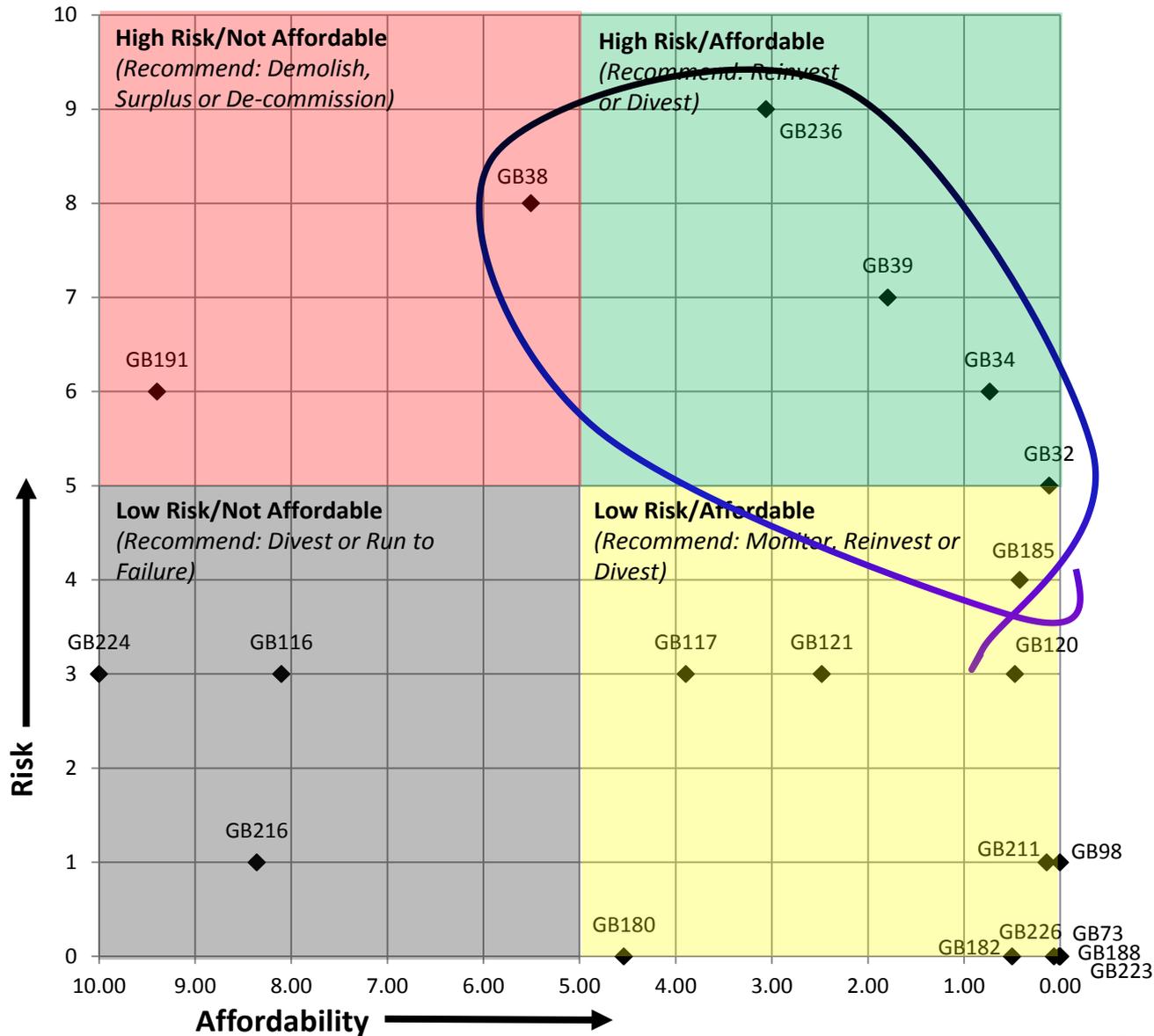


1. How our assets are performing.
2. Where the Port should reinvest.
3. What costs will likely be incurred during the life of an asset.
4. Which assets should be removed from service and when.

Know where to Reinvest for the Greatest Good



Summed Risk vs. Cost/Revenue



Projects valued at less than \$50,000 are not shown.

INERTIA STILL REIGNS IN MOST PORTS; CORPORATE CULTURE

- Defining goals: “What’s the problem?”; “What do we want?”
- Overcoming defensiveness: “You gotta problem with me (or my department)?”
- Shedding light and parsing the black box: “Where do we start?”; “What do we do next?”
- Making room on a full plate of responsibilities:
 - “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”
- Consultant oversells or misses target:
 - “This is going to be expensive!”
 - “Been there, done that, and it didn’t work”

LESSONS LEARNED

GUIDING PHILOSOPHY

- The vast majority of data the port needs to develop an enterprise level, asset management program *currently exists within the organization*
- Most key processes are in place, but not linked
- Long held beliefs might not be accurate
- The consultant's role is to help identify, extract, augment, organize and integrate relevant information into transparent and enduring business processes in a manner that's consistent with Port policy, management and cultural context

KEY SUCCESS FACTORS

- Sustained Commitment from Top Level Management
 - Manage Expectations and Leverage Low Hanging Fruit
 - Port of Tacoma: Asset management is not Simple!
- Change Management and Training Requirements are Often Underestimated
 - Plan for Resistance--Manage Change
 - Communicate!
- Business Process and IT Systems are Frequently Not Aligned
 - Engage Stakeholders Openly
- Discuss and Clarify Return on AM Program Investment.
 - Define Value Proposition for All Stake Holders

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!

Asset Management Resources

- AASHTO Transportation Asset Management Guide
- FHWA Asset Management Primer
- TRB (Transportation Research Board), National Cooperative Highway Research Program (NCHRP) Transportation Asset Management -- Guide to Implementation
- TRB Airport Cooperative Research Program (ACRP) Report 69 – Asset and Infrastructure Management for Airports; Primer and Guidebook
- Publicly Available Specification (PAS) 55 2008 ISO 55000 AM Standard based on PAS55, to be released 1213
 - ISO 55000-Overview, Principles, and Terminology;
 - ISO 55001-Management System Requirements;
 - ISO 55002-Application Guidelines
- International Infrastructure Management Manual (IIMM), 2011
- New Zealand Asset Management Steering (NAMS) Group--Optimised Decision Making Guidelines Ed 1.0
- PIANC InCom Report of WG 25 – April 2006 Maintenance and Renovation of Navigation Infrastructure
- AAPA
 - Facilities Engineering and Finance committee seminars; AM Webinar (2/13)
 - Website: "Issues and Advocacy"--"Best Practices"-- "Asset Management"
- TRB Ports and Channels Committee
- ASCE, COPRI Ports and Harbors Committee, Waterfront Inspection Task Cte-- Waterfront Facilities Inspections & Assessments Standard Practice Manual"

Questions?

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