

A large cargo ship is docked at a port, with its deck and various structures visible. The ship is positioned diagonally across the frame, from the bottom left towards the top right. The background shows a hazy sky and some port infrastructure.

# **Strategic Asset Management for Ports: An Imperative Whose Time Is Certainly Getting Closer**

- Recent history and current status
- Lessons learned
- Research recommendation

TRB 2015 Summer Meeting and Conference

Washington, DC

June 22-22, 2016

# Center for Port Management

## Lamar University

- Masters program targeting professionals interested in enhancing their management education and skills
- Online course format takes advantage of Lamar's leading edge remote learning capabilities
- Accesses students and adjunct faculty throughout the world
- Jointly offered by Business College and Industrial Engineering.
- See <http://engineering.lamar.edu/industrial/center-for-advances-in-port-management.html>



# Port Asset Management; Recent History And Current Status

- PMV—internal effort, management focus
- Seattle—internal effort, achieved initial goals, not management focus
- Tacoma—consultant led, achieved initial goals, not management focus
- Longview—consultant led, assessing results
- Vancouver—internal effort, continuing progress
- Portland—internal effort, management focus
- Oakland—consultant, IT focus did not prove useful, on hold
- Long Beach—RFP developed, interested but not management focus at this time
- LA—policy developed, but not management focus at this time
- San Diego—consultant, commission and management focus, work in progress
- Houston—initial consultant now internal effort, management focus, consultant on hold while internal team digests and prepares for more effective utilization of consultant resources
- PANYNJ—consultant, IT focus did not prove useful, reassessing internally

# PHA Strategic Asset Management Goals

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.
6. Develop policies and procedures that allow the PHA to more effectively capture asset life cycle costs, enabling asset planning, budgeting, and decision making processes.



# Port Metro Vancouver

- The goal of PMV's Asset Management program is to develop an integrated decision support framework with modeling capabilities for short, medium, and long range forecasting to optimize the creation, use, and replacement of infrastructure assets. This should be completed at the lowest possible lifecycle cost while meeting the required level of service at an acceptable risk.
  - A shift from being reactive to proactive:
    - *“What will our annual capital maintenance expenditures be for the next 10 years?”*
    - *“What are our priorities for capital repairs and why?”*
    - *“What are the risks if we defer these repairs?”*

# Lessons Learned

- Policy and organizational development
  - Develop a Corporate AM Policy
  - Mid-level management support and engagement critical
  - Develop a vision, but keep processes as simple as possible; objectives incremental and measureable
  - Recognize the required cultural change and keep the entire organization informed
  - Deploy cross departmental steering and technical committees
- Asset data
  - Prioritize assets for AM program focus
  - Identify critical data—understand level of service requirements—and, don't “over collect” data
  - Harmonization of data bases is essential and in larger ports the biggest headache—understand time and resource requirements
- Business process
  - Manageable risk assessment processes, including objective, quantifiable risk register, to inform decision process
  - Inform capex throughout asset life cycle including disposal
  - Understand software does not constitute an AM program
- Continuous improvement: Network with port and non-port industry AM resources



# Research Recommendation

- Justification: US port assets are critical to international supply chains, economic prosperity and national security. Deferred maintenance of strategic port assets is measured in \$B. Improved asset management will benefit the port, its region and the nation. Recognition of the importance of strategic AM is widely accepted in the port industry. Implementation across the port industry has proved problematic with some ports pulling back. Resource-effective strategies and government support will accelerate adoption of SAM at ports, large and small.
- Proposal:
  - Identify and assess best global port and major infrastructure asset management programs, incorporating lessons learned and best practices found globally in ports and comparable industries, and recommend a feasible approach that can be adopted by ports large and small for cost and time effective asset management program development
  - Identify a suitable port; cost-share fund a prototype asset management program development plan.