Sustainable Asset Management and Managing Environmental costs

Stephanie Jones Stebbins, PE
Seaport Environmental Programs
Outline

- Port of Seattle overview
- Sustainable Asset Management
- Resource Conservation during Operations
- Cost Recovery
Port of Seattle Overview

• 3 operating divisions
• Airport (15th busiest in US)
• Seaport (container port, bulk cargo, cruise, fishing fleet, grain)
• Real Estate
Seaport Asset Portfolio

Current replacement value > $2.0 billion
Seattle Seaport Business model

• Primary:
  – Port builds facilities
  – Tenant leases facilities – long-term
  – Tenant responsible for maintenance

• Secondary:
  – Port builds facilities
  – Tenants rent facilities/pay dock moorage
  – Port responsible for maintenance
Seaport capital assets

- Docks & piers
- Pavement
- Rail
- Buildings
- Cranes
- Utility infrastructure
- Roads & bridges
Our Challenge

- What do we own?
- What is the age, condition, and cost to replace?
- How long will they last based on appropriated maintenance funding?
- How long do we want it to last?
- Who is responsible for maintaining?
- How do we prioritize?
Sustainable Asset Management Policy adopted 2007

- Focus on total cost of facility ownership to link capital investments & ongoing operating costs
- Benchmarking – industry best practices to maximize efficient use of funds & conserve natural resources
- Integrate environmental & financial performance – reduce total ownership costs AND reduce environmental impacts
Environmental asset management

• CEO goal – be the cleanest, greenest, most energy efficient Port in the US

• Our approach:
  1. Achieve real environmental benefits
  2. Make business sense
     • Cost effective
     • Enhance customer value
     • Enhance long term competitiveness
Total cost of ownership

• Present value of:
  – Initial capital cost
  – Ongoing operations & maintenance
  – Renewal at end of useful life

• Adjust for:
  – Business model
  – Changes in needs over useful life
  – Levels of service
Changing the model to total cost of ownership

- Much of total ownership costs occur after design and construction
- Decisions driving these costs occur before detailed design is completed
- Change long standing approach - lowest initial cost
- Change internal/external expectations
  - Design, engineering, project management
  - Maintenance
Detailed facility assessments at the Seattle Seaport

- In-house facility condition assessments of 80-100 year old facilities
- Detailed - to building & utility system level
- Determine useful life, ongoing maintenance costs, renewal/replacement costs
- Combine with business planning for facility long term use
Maintenance Goals

• **Where Port responsible**
  – Focus on preventive maintenance

• **Where tenant responsible**
  – Developing & documenting joint expectations
  – Documenting asset condition
  – Auditing tenant maintenance performance
Resource Conservation
Resource Use and Conservation

- Sustainable Facility Management
- Energy Conservation Efforts:
  - Port of Seattle Headquarters: 43% reduction in energy use: $126K annual savings
  - Pier 66: 58% reduction in energy use: $156K annual savings
Conservation Initiatives

- Installed VFDs
- Replaced all exit lights with LED
- Turned off unneeded lighting
Energy Savings Strategies

- New HVAC contract
- Repaired deferred maintenance items
- Negotiated a long-term contract w/ Seattle Steam
- Changed the way we operate equipment
Worked w/ Mechanical Contr. to modify HVAC equipment operation

Scheduled larger spaces off
Chiller Plant

- Put the chillers on a schedule
- Raised chilled water set point
Electricity Savings

- 2002 usage: 4,115,704 kwh
- 2006 usage: 1,710,903 kwh

\[
\frac{4,115,704 - 1,710,903}{4,115,704} = 2,404,801 	ext{ kwh}
\]

58.4% less electricity used

$163,000 2006 savings

$200,000 2009 savings
Cost Recovery
Past Cost Summary: $102 Million

Figure 1a. Total Environmental Cleanup Cost "Gross" 1991 to 2009 $102 Million

- Lower Duwamish, $25,409, 25%
- T91, $7,163, 7%
- T5 PSR, $20,893, 21%
- East Waterway, $26,768, 27%
- HI Uplands, $6,299, 6%
- T117 Uplands, $4,021, 4%
- T117 Sediments, $3,597, 4%
- T30, $2,031, 2%
- Other, $3,836, 4%
- T30 cleanup costs between 1984 and 2000.

Footnote: Excludes environmental cleanup costs for: T5 Southwest Harbor Project RA1, RA-2, RA3, RA5; T30 cleanup costs between 1984 and 2000.
Cost Recovery by Site: $65 Million

- Lower Duwamish, $(21,117), -33%
- T5 PSR, $(17,654), -27%
- T117 Uplands, $(10,860), -17%
- Other, $(1,417), -2%
- HI Uplands, $(5,423), -8%
- East Waterway, $(5,229), -8%
- T117 Sediments, $(1,510), -2%
- T91, $(1,733), -3%
Cost Recovery by Source ($65 Million) 1991 to 2009

- LITIGATION Future Liability, ($11,155,000), -17%
- GRANT, ($13,677,182), -21%
- INSURANCE, (7,309,662), -11%
- LITIGATION, (5,670,682), -9%
- REIMB, (18,798,691), -29%
- TRUST, (8,304,504), -13%
Cost Recovery by Year and Source

Footnote: only includes cost recovery through 2009 6/30/2009
Stephanie Jones Stebbins
206-787-3818
jonesstebbins.j@portseattle.org