

# Sustainable Asset Management and Managing Environmental costs

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Seaport Environmental Programs

# Outline

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- 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



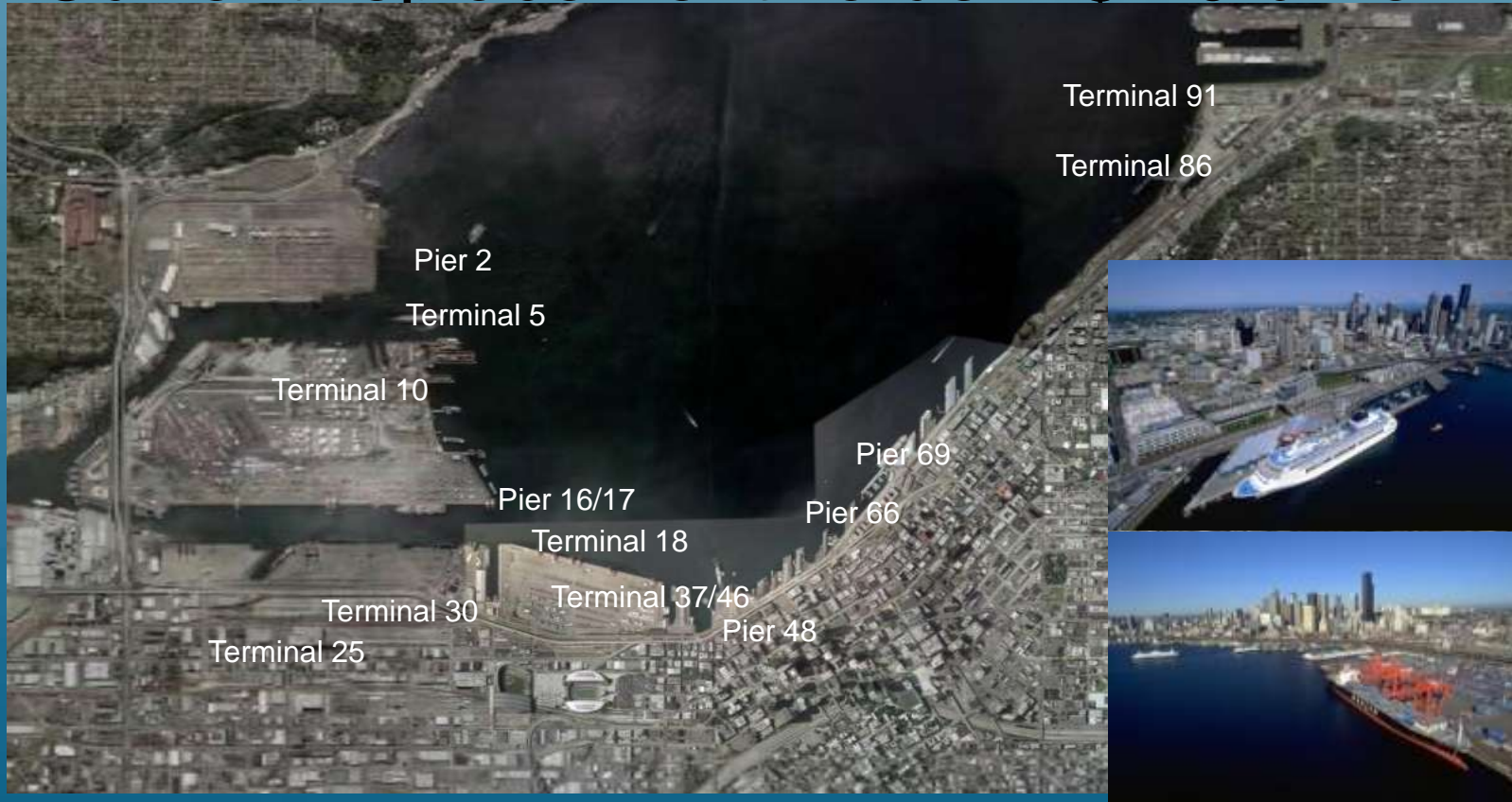


# Port of Seattle Seaport Facilities



# 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

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- 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  
2,404,801 kwh

**58.4%** less electricity used

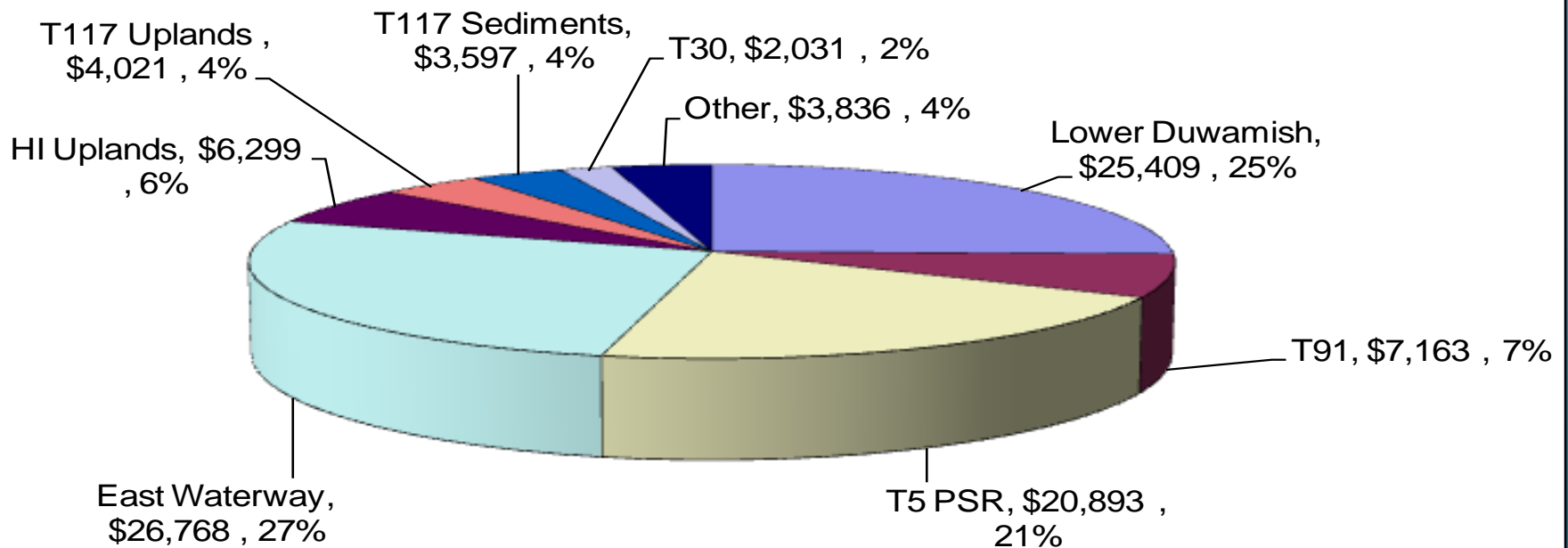
\$163,000 2006 savings

\$200,000 2009 savings

# Cost Recovery

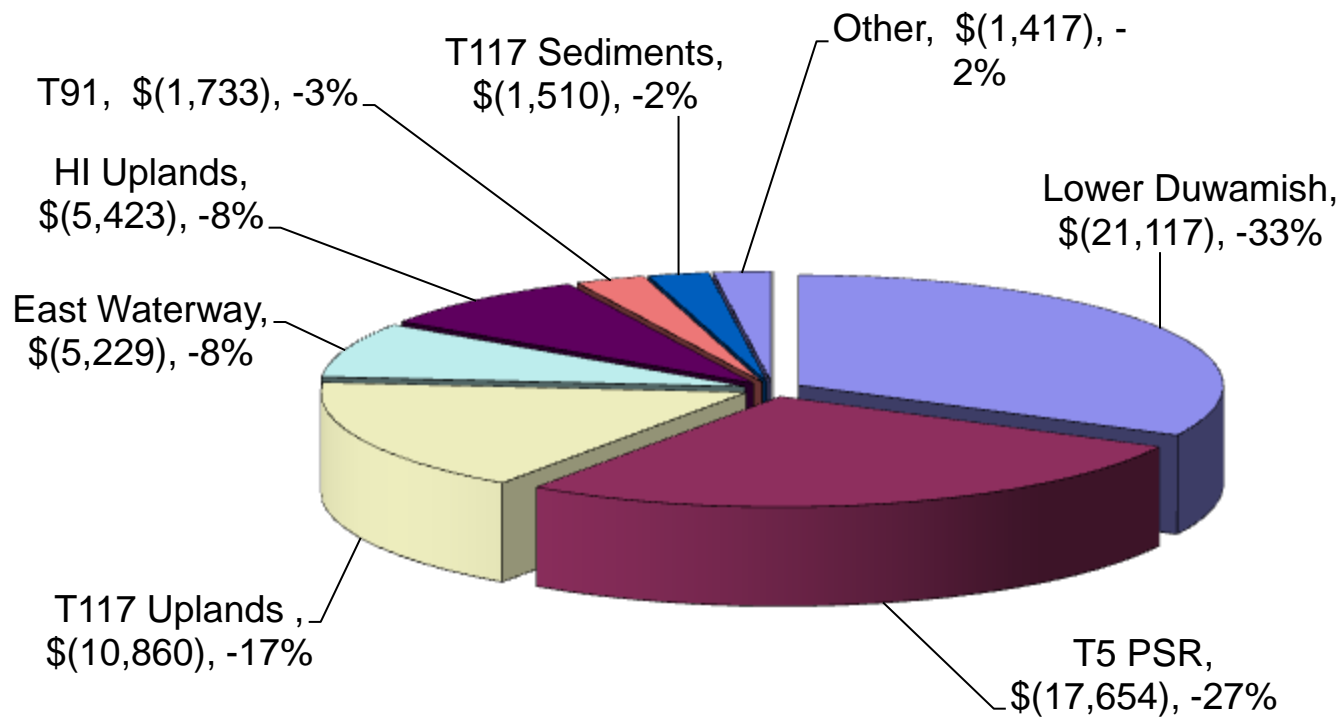
# Past Cost Summary: \$102 Million

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



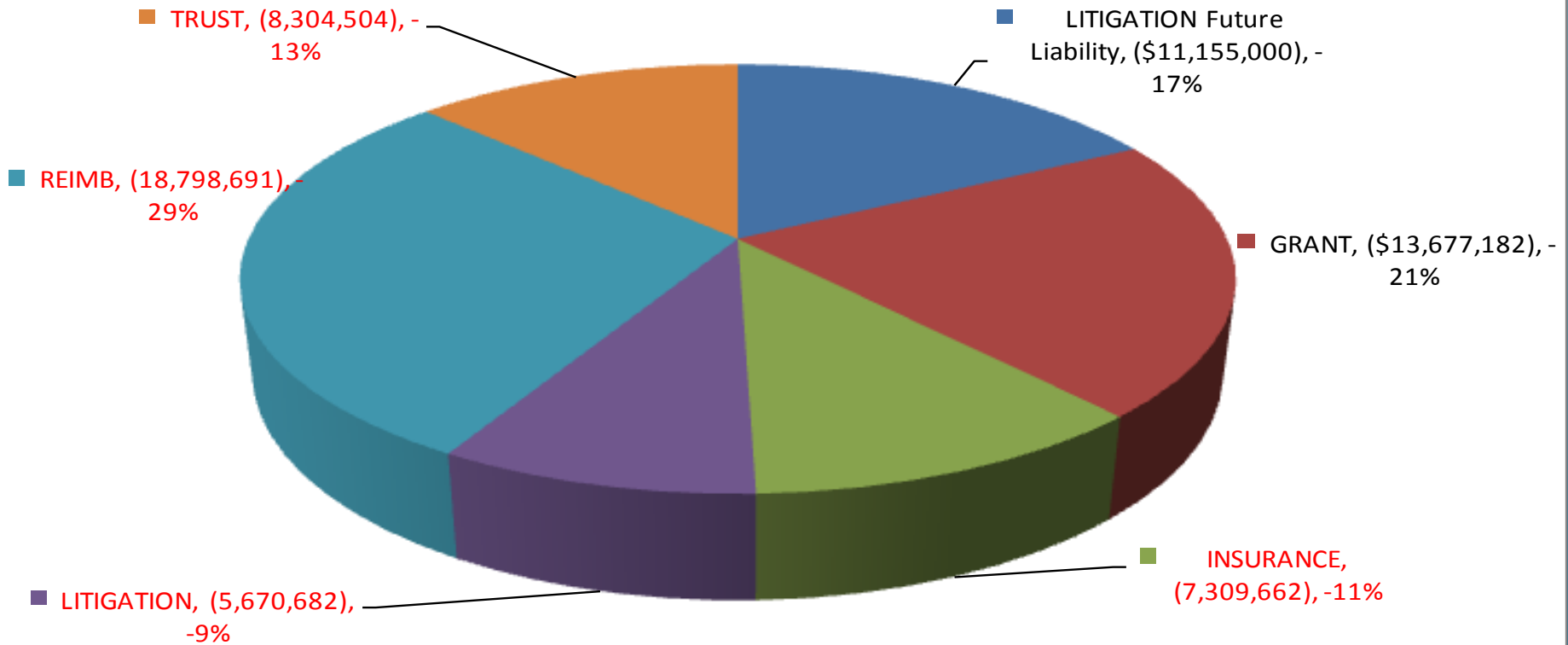
Footnote: Excludes environmental cleanup costs for: T5 Southwest Harbor Project RA1, RA-2, RA3, RA5; T30 cleanup costs between 1984 and 2000.

# Cost Recovery by Site: \$65 Million

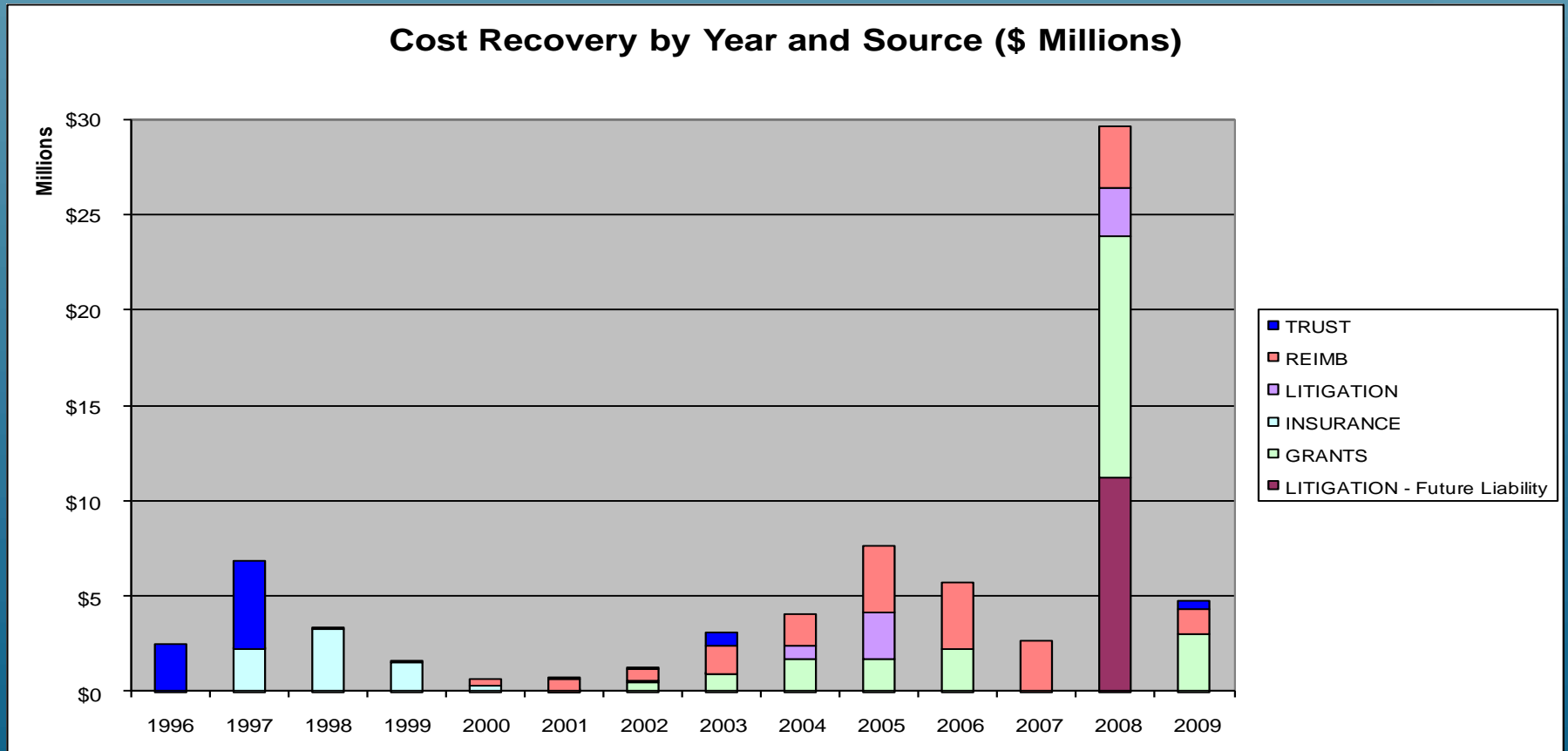




# Cost Recovery by Source (\$65 Million) 1991 to 2009



# Cost Recovery by Year and Source



Footnote: only includes cost recovery through 2009 6/30/2009

The logo consists of three horizontal, rounded rectangular bars stacked vertically. The top bar is light blue, the middle bar is green, and the bottom bar is dark teal. The text 'Port of Seattle' is overlaid on the image in a blue, sans-serif font.

# Port of Seattle

Where a Sustainable World is Headed

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