

# SUSTAINABILITY FOR SMALLER AIRPORTS

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# Overview of Presentation

- What is sustainability?
- Developing a sustainability roadmap
- Sea-Tac's strategy in action

# Seattle-Tacoma International Airport

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- 32 million Annual Passengers - 2008
- 19<sup>th</sup> busiest in US, 33<sup>rd</sup> busiest in world
- Asset replacement value of \$6.5B



# What is Sustainability?



•Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

*The Brundtland Report*

•"Sustainable" means to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations of Americans...

*President George W. Bush*

•Sustainability is really the study of the interconnectedness of all things.

*Barbara J. Lither, J.D.*

# What is Sustainability?

- Concept of sustainability can be conceptually too vague to have much practical value.
- A road map (strategy) is necessary to determine what sustainability can/should mean for your organization.



# Developing a Sustainability Roadmap

- **At Sea-Tac this process has involved:**
  - **Determining business/policy drivers of sustainability**
  - **Understanding current environmental impacts (footprint)**
  - **Establishing a vision**
  - **Setting objectives and strategies**
  - **Developing an action plan**
  - **Implementing and monitoring**
  - **Understanding that sustainability is a continuous process**

# Sea-Tac's Sustainability Strategy in Action

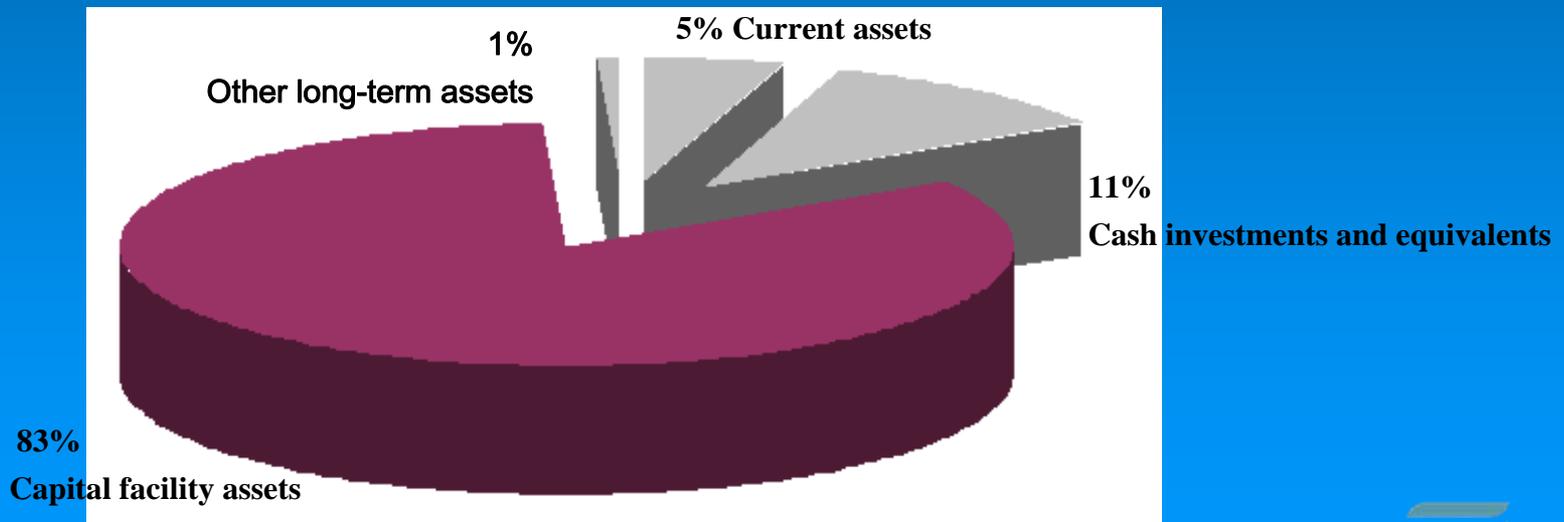
## Examples:

- Facilities & Infrastructure
- Solid Waste/ Recycling
- Energy Conservation



# Sustainability in Action: Facilities and Infrastructure

- Assets drive environmental impacts
- Port is the owner, builder, operator, maintainer, and lessor for many facilities
- For every \$1 spent on construction, about \$3 of ongoing cost experienced
- Capital facilities are a core strategic resource enabling us to generate revenue
- Capital facilities are the largest asset we own, 83% of depreciated book value
- Strategically balance capital and operating costs (optimize total ownership cost)



# Policy Drivers

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- Environmental and financial performance need to be sustainable and are not mutually exclusive
- This is a continuous improvement opportunity in the Port's core competencies of designing, building, operating, maintaining and mitigating impacts
- For every dollar spent on construction somewhere between 3-5 dollars will/should be spent on maintenance and renewal of an asset during its life to achieve maximum value
- Initial or first costs and ongoing costs are clearly linked
- 75% of decisions which influence total costs are made in design, while 75% of costs occur after construction
- Built environment is a significant generator of green house gases



# Goals For Facilities and Infrastructure Management

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- To make decisions fully informed on total cost of ownership implications
- To better manage long term capital and operating costs
- To promote environmentally sustainable development
- To conserve resources

# Facilities and Infrastructure

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## Runway Rehabilitation:

- **RW 16L/34R is 11,901 feet long and is the longest runway at Sea-Tac and a necessity for heavy air traffic loads. FAA requires a Pavement Maintenance Management Program and the results show significant runway damage and RW 16L/34R must be replaced or repaired.**
- **What is the best alternative?**

# Sustainability in Action: Facilities and Infrastructure

Alternatives	Total Project Cost (\$M)	Total Cost over 40 years (\$M)	CPE Impact				Expected Life of Pavement Improvement
			2010	2015	2020	2030	
Asphalt Overlay	\$56.9	\$241.9	0.25	0.23	0.33	0.41	10
Full Replacement	\$78.0	\$98.6	0.27	0.23	0.22	0.18	40
Surface Maintenance	\$21.0	\$171.3	0.09	0.16	0.54	0.43	5

# Sustainability in Action: Materials Use/Solid Waste

## Programs:

- Coffee Grounds Recycled as Compost
- “Pay as You Throw” Tenant Incentives (charge to throw away trash, recycling free)
- Waste Segregation and Centralized Collection



# Policy Drivers

- Increased efficiency often leads to cost savings for the Port and our customers
- Market price signals motivate customers to use resources more efficiently
- Public expectations regarding recycling are changing rapidly
- Multiple environmental benefits e.g. reduction in resource use, landfill space, GHG emission reductions

# Sustainability in Action: Solid Waste/Recycling

Municipal Solid Waste	2001	2004	2008
Generated	3546	5700	6350
Landfilled	3238	5000	5030
Recycled	308	700	1320
Recycling Rate	8.6%	12.3%	21%
Total Cost Savings			\$170,000



# Goals For Solid Waste Program

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Comprehensive Waste Audit

Track and Report Recycling Activity

Expand Recycling Program, to include off aircraft waste

Buy more Recycle-Content Goods

Environmental Purchasing Program

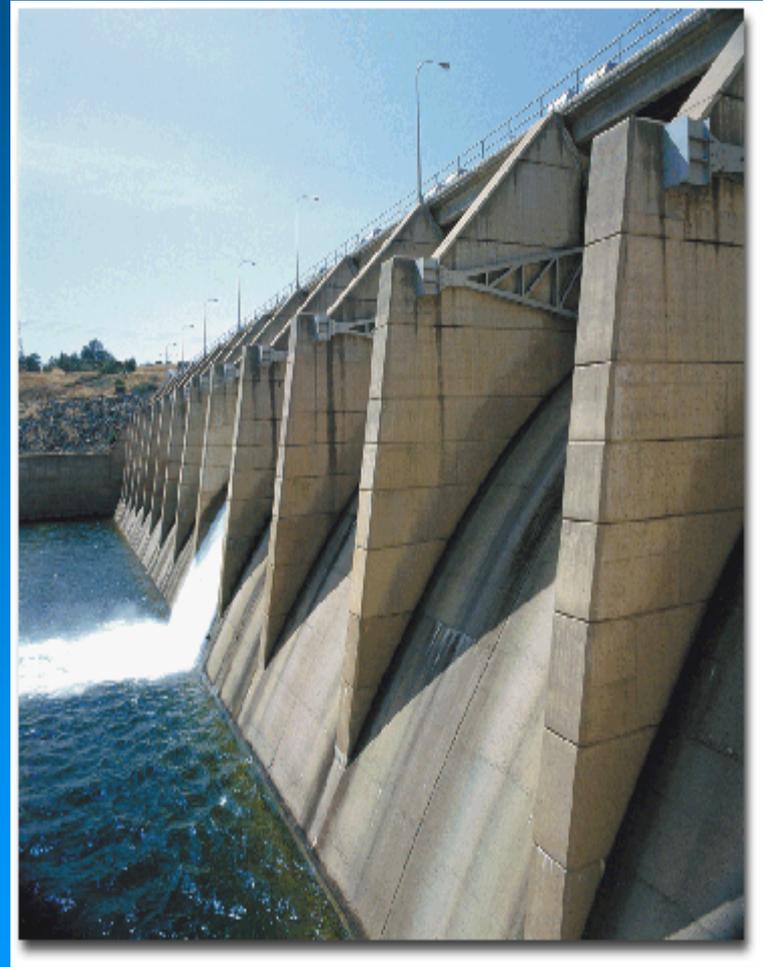
Promote biodegradable food and beverage containers

Food waste composting

CONTINUE TO SAVE THE PORT AND TENANTS MONEY!

# Energy Use and Conservation

- In 2008, Sea-Tac consumed more than 148,000,000 kWh of electricity
- Environmental impact of Sea-Tac's electricity use is less than that of other similarly sized airports
- Conservation efforts have resulted in a savings of more than 46,000,000 kWh of electricity, nearly 25% of total demand
- Conservation measures have saved Sea-Tac more than \$1.5 million annually in electricity costs



# Building Efficiency - Achievements

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Lighting Upgrades and Practices

Photocells

Full Cost-Based Utility Rates

Heating, Ventilation, and Air Conditioning Improvements

Adjusting Thermostats

Retro-Fitting Escalators

Improving Boiler Efficiency

25% Green Power/Renewable Energy Commitment

Establishing Building Design Standards

Obtaining Conservation Funding

Optimized pump-house controls

Leveraged efficiency projects to obtain \$1.2 Million in Agency reimbursements

# Energy Efficiency - Opportunities

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Implement new conservation measures:

- Upgrade flush valves in Concourse
- Potential chilled water system efficiency improvements
- Expand heat recovery methods
- Upgrade parking terminal perimeter and road lights
- Review feasibility of strategies for airside optimization

Evaluate additional conservation measures:

- Reassess internal rate of return for energy conservation projects
- Consider new natural gas conservation measures
- Examine North and South satellite lighting and HVAC system upgrade
- Initiate airport-wide pressurization study

Widen comfort zone parameters for heating and cooling

# Conclusion

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- The concept of sustainability can be allusive
- Organizations need to consider:
  - Feasibility
  - Environmental cost/benefit analysis
  - Degree of environmental improvement should be proportionate to cost
- Look for easy wins that will deliver a fast payback
- Use disciplined, quantitative analysis to identify your best opportunities
- Strategy plan can focus sustainability efforts on key performance areas
- Coordination with community, airlines and tenants necessary
- Regardless of the size of your facility there are opportunities to reduce impacts and lower costs