Item No. 7b supp
Meeting Date: July 11, 2017

Mechanical Energy Conservation
Stage 3

C800658

Seattle-Tacoma

International Airport

Port of Seattle

Port Legacy of Energy Conservation

- Airport completed over 50 conservation projects since 2001
- Cumulatively, projects reduce
  - ~20% energy
  - ~3,000 metric tons/year GHG
  - Annual energy bill by $1.9M (21%)
- Stage 1 Mechanical (2008)
- Stage 2 Mechanical (2014)

Long-term savings from early conservation projects

Stage 3: Conservation Measures

1. Improve chilled water production and distribution network
2. Demand based ventilation
3. Air curtains
4. HVAC constant volume (CV) to variable air (VAV) box in Main Terminal
5. Insulation
6. Metering

Conservation measures reduce both electricity and natural gas

Stage 3: Main Terminal Door Air Curtains

- Install at 27 doors to Main Terminal
- Reduces conditioned air loss to outdoors with High Velocity Air Curtains

Infrared Heat Loss Image	Normal Color Image	Example Unit – Sky Bridge 6

Stage 3: Sustainability Benefits

- Contributes to two Century Agenda objectives
  - Reduces energy
    - 0.4% reduction in total electricity use
    - 6.1% reduction in natural gas needed to heat Airport terminal
  - Reduces 839 metric tons of carbon/year
- Reduces reliance on hydropower
- Increases energy resiliency

Stage 3 advances our Century Agenda objectives

Financial Return

Energy Rate Assumptions	Internal Rate of Return (IRR)	Net Present Value (NPV)
Renewable Energy Rates	-0.3%	-$3.7M
Current/Historical Energy Rates	-6% to -7%	-$5.2 to -$5.5M

Project justification based on sustainability benefits, not financial return

Budget and Schedule

	Anticipated Request	Total Project
Design	$1.5M	$1.8M
Construction	$5.3M	$5.3M
Total	**$6.8M**	**$7.1M**

Schedule

- 2018 Q3 - Complete Design
- 2018 Q3 – Start Construction
- 2019 Q3 – In use

Anticipated request is $6.8M

Questions?