

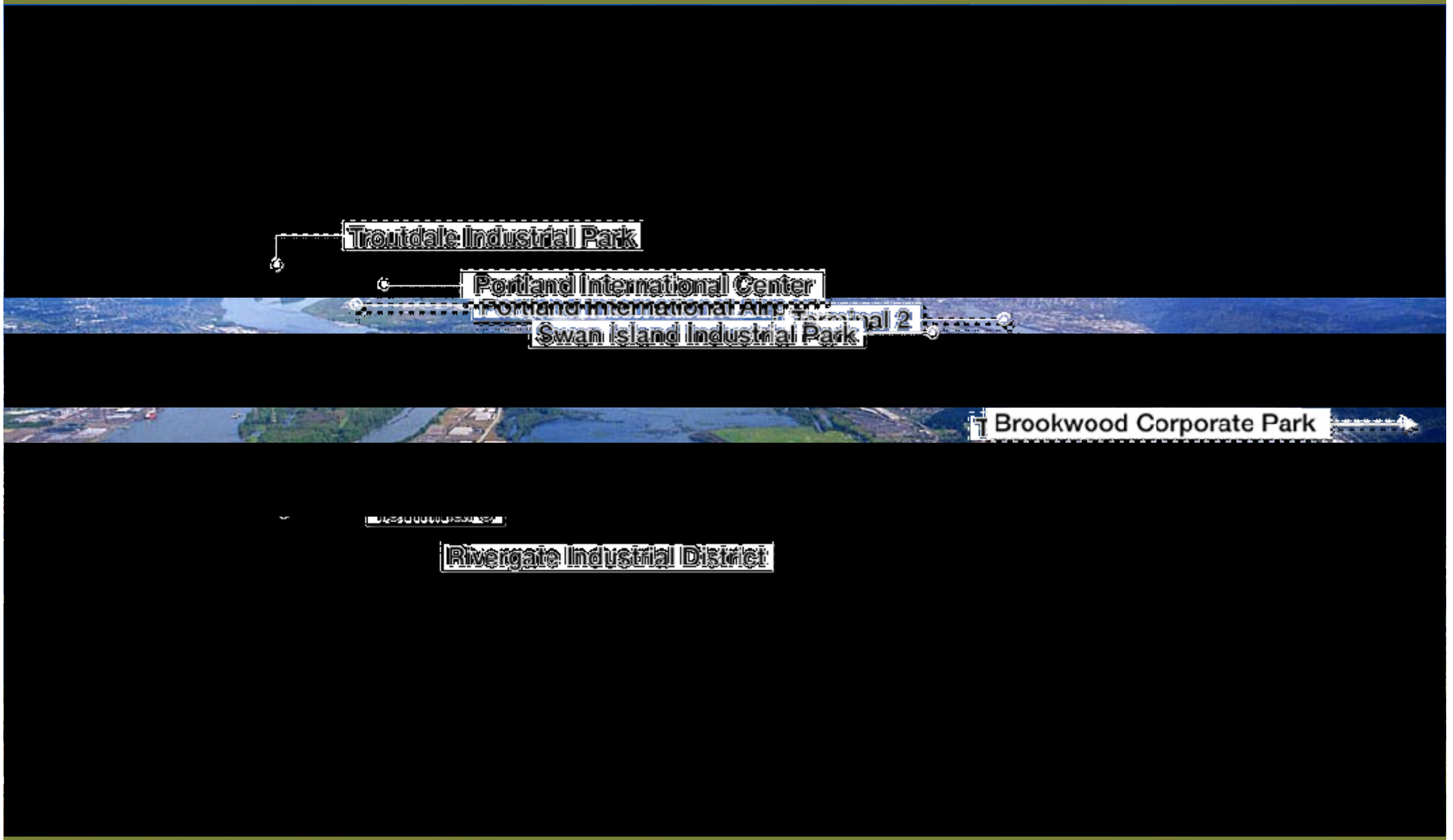
Mitigating the Effects of Port Operations on Climate Change

David Breen
Air Quality Program Manager
Port of Portland

November 12, 2008

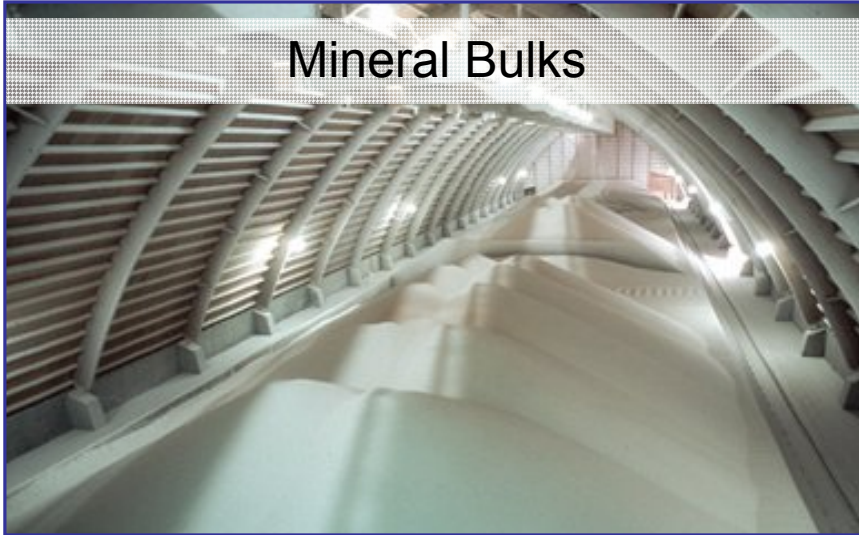


The Port of Portland: What We Do

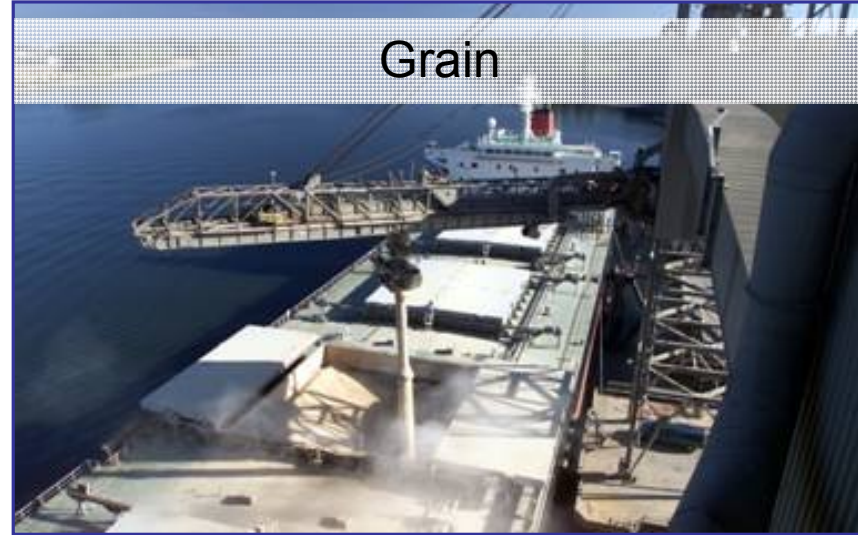


Marine Business Lines

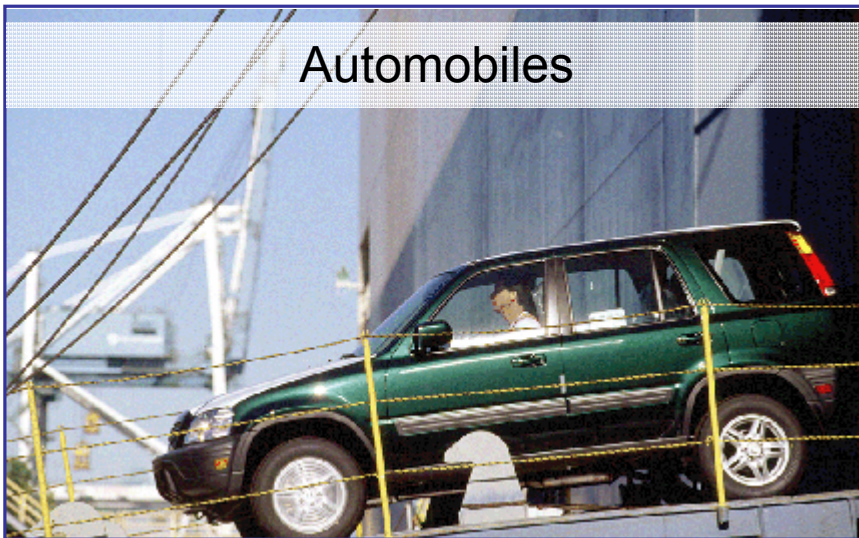
Mineral Bulks



Grain



Automobiles



Containers



Environmental Policy



Emissions Inventory: 2000 Baseline



Emissions Inventory: 2008 The Climate Registry



- ✓ 39 participating U.S. states + Canadian Provinces and Mexican States
- ✓ Oregon mandatory reporting
- ✓ Western Climate Initiative reporting



Emissions Inventory: The Climate Registry

Direct Emissions (Scope 1):

Port controlled emissions within its organizational boundaries

Indirect Emissions (Scope 2):

Electricity, steam, heating, or cooling. Emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling.

<Optional> Upstream and Downstream Emissions (Scope 3):

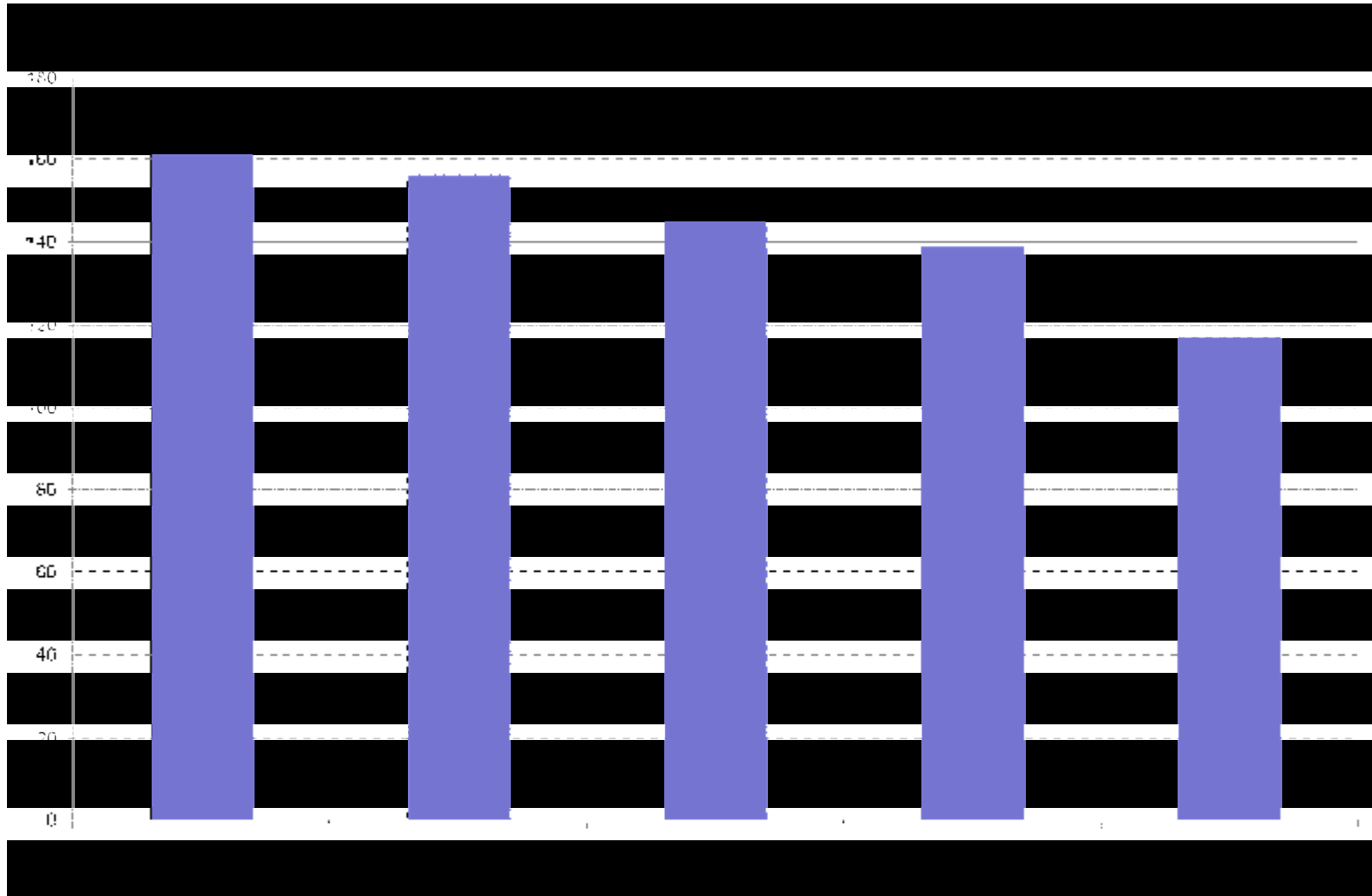
Emissions associated upstream products and downstream goods



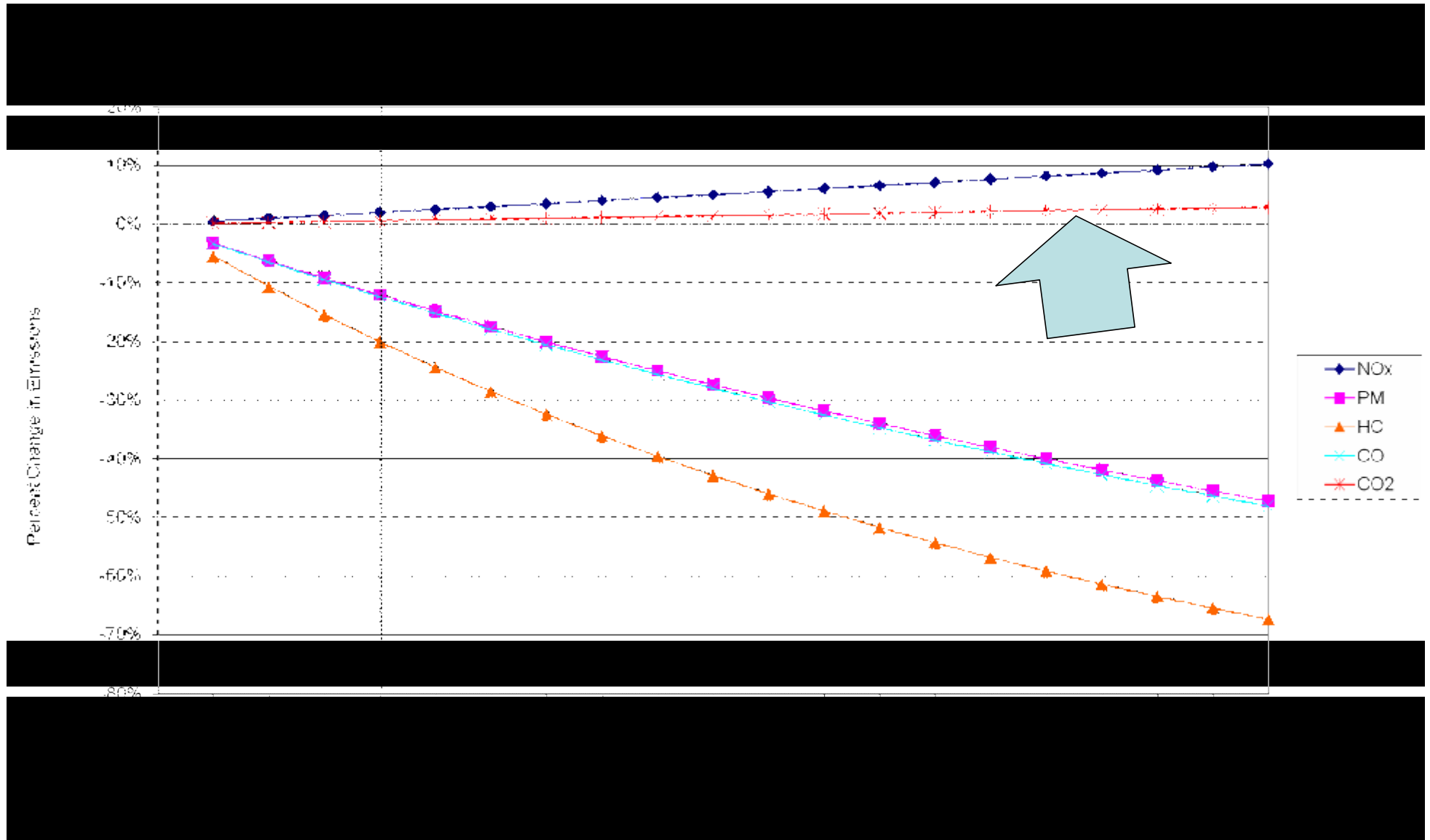
TCR: Geographic Allocation of Emissions



TCR: Mobile Source Emissions

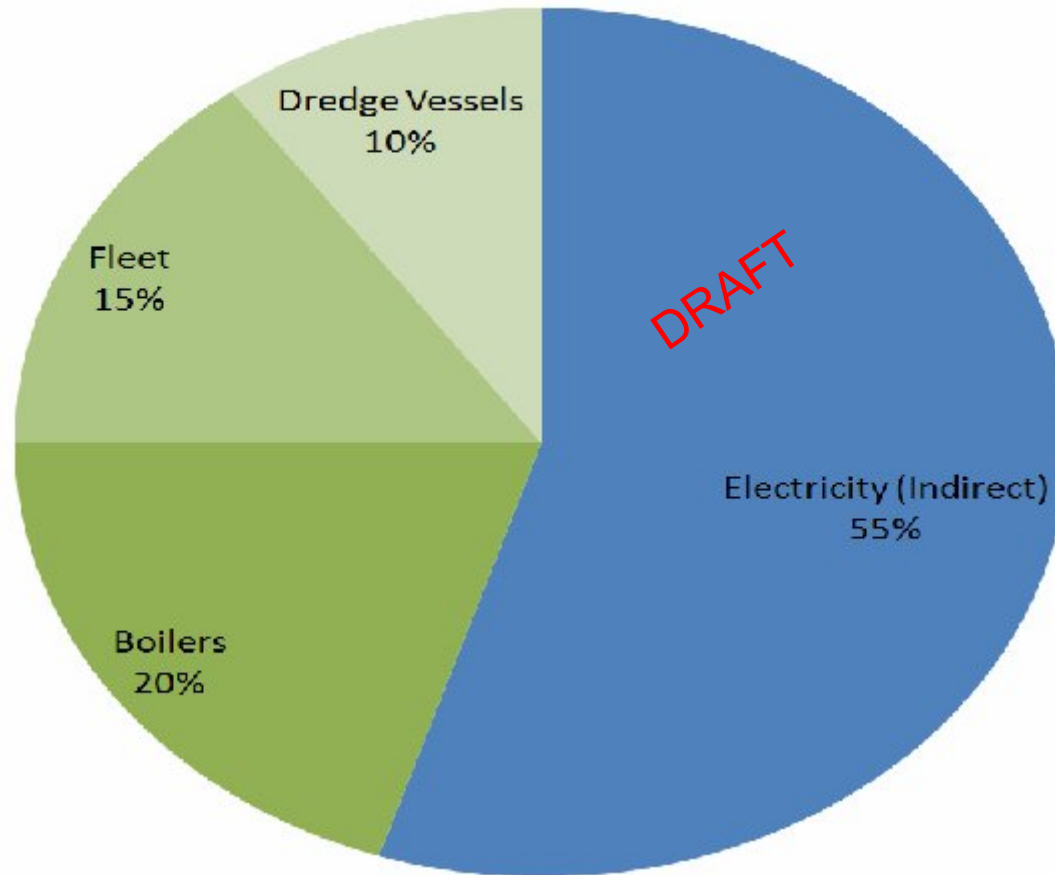


TRC: Mobile Source Emissions



Port GHG Emissions

Port Owned and Controlled



GHG Reduction Measures

Energy

- Reduce Energy Consumption
- Purchase Electrical Energy From Sustainable Sources

Mobile Source Emissions

- Reduce Idling
- Alternative Fuels and Alternative Fuel Vehicles



Reduce Energy Consumption

Efficient lighting upgrades

Automatic shut offs

Maximize day lighting in new developments



Purchase Electrical Energy From Sustainable Sources

Purchase Electrical Energy From Sustainable Sources

Targets:

1. Double renewable energy purchase from 10%-20%.
2. Evaluate the purchase of 100% of all Port electric energy from renewable sources.



Marine Terminal 2

Cold Ironing & Steam for Dredge Equipment



Marine Terminal 5

Diesel Anti-Idling (electricity)
Traction Slugs

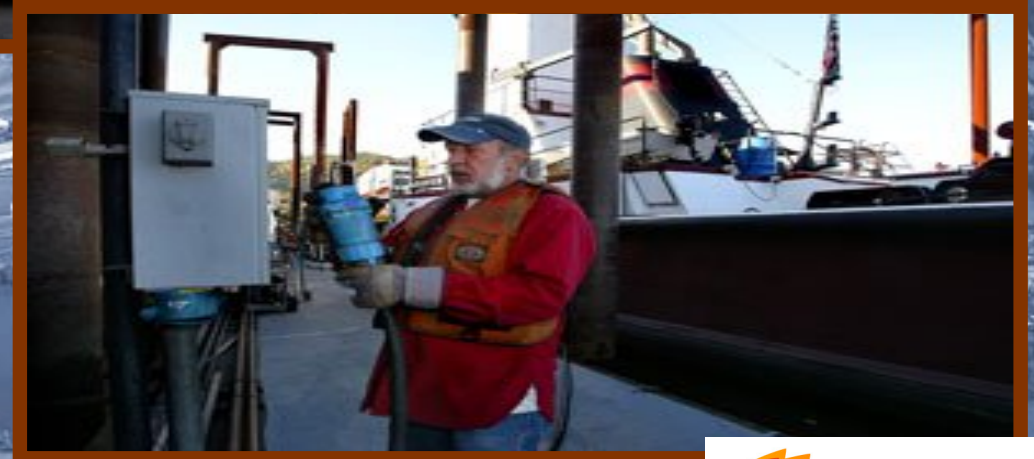


Marine Terminal 6

Alternative Fuel

OCR

Tug Cold Ironing



Portland International Airport

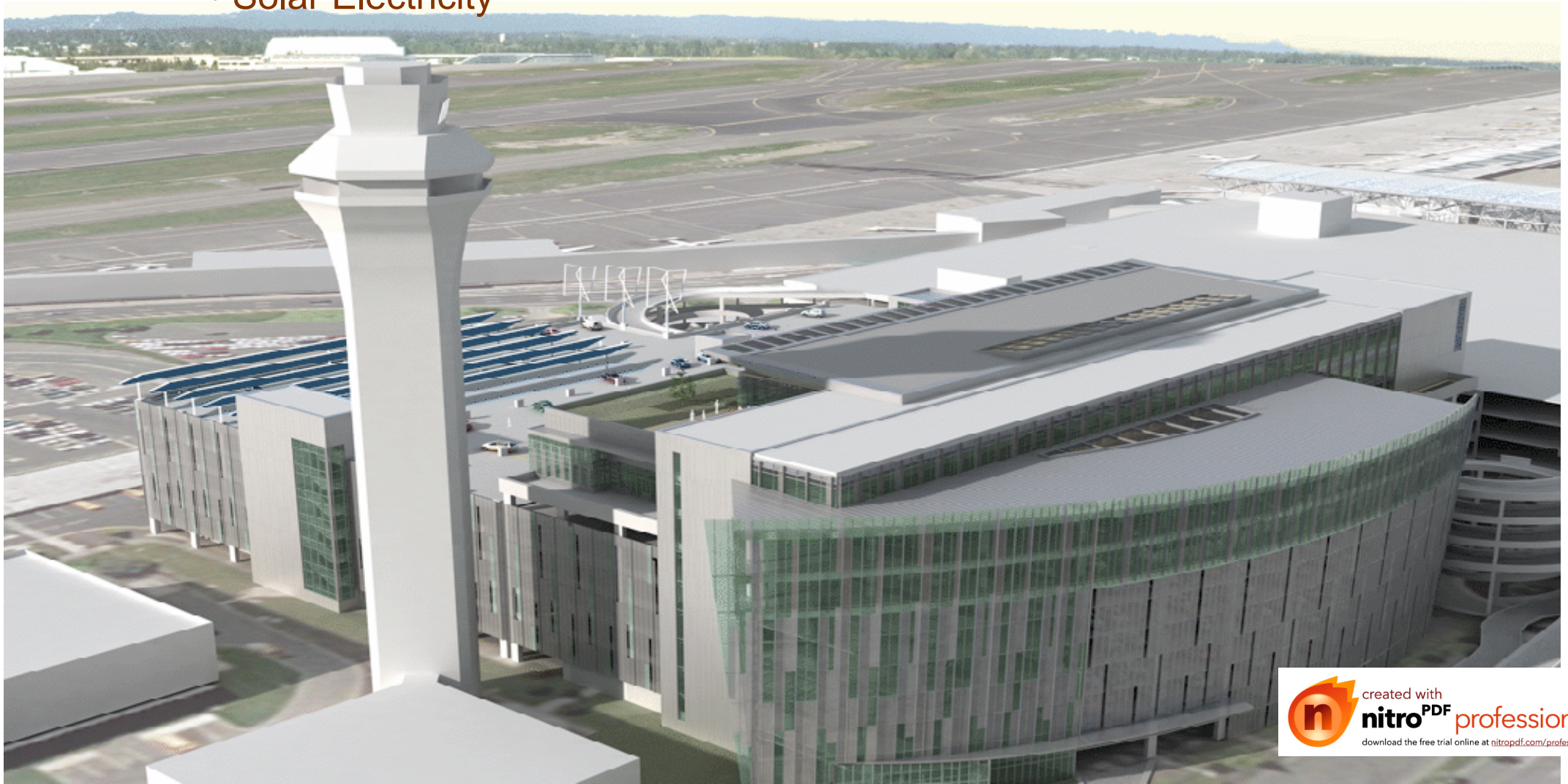
Portland International Airport



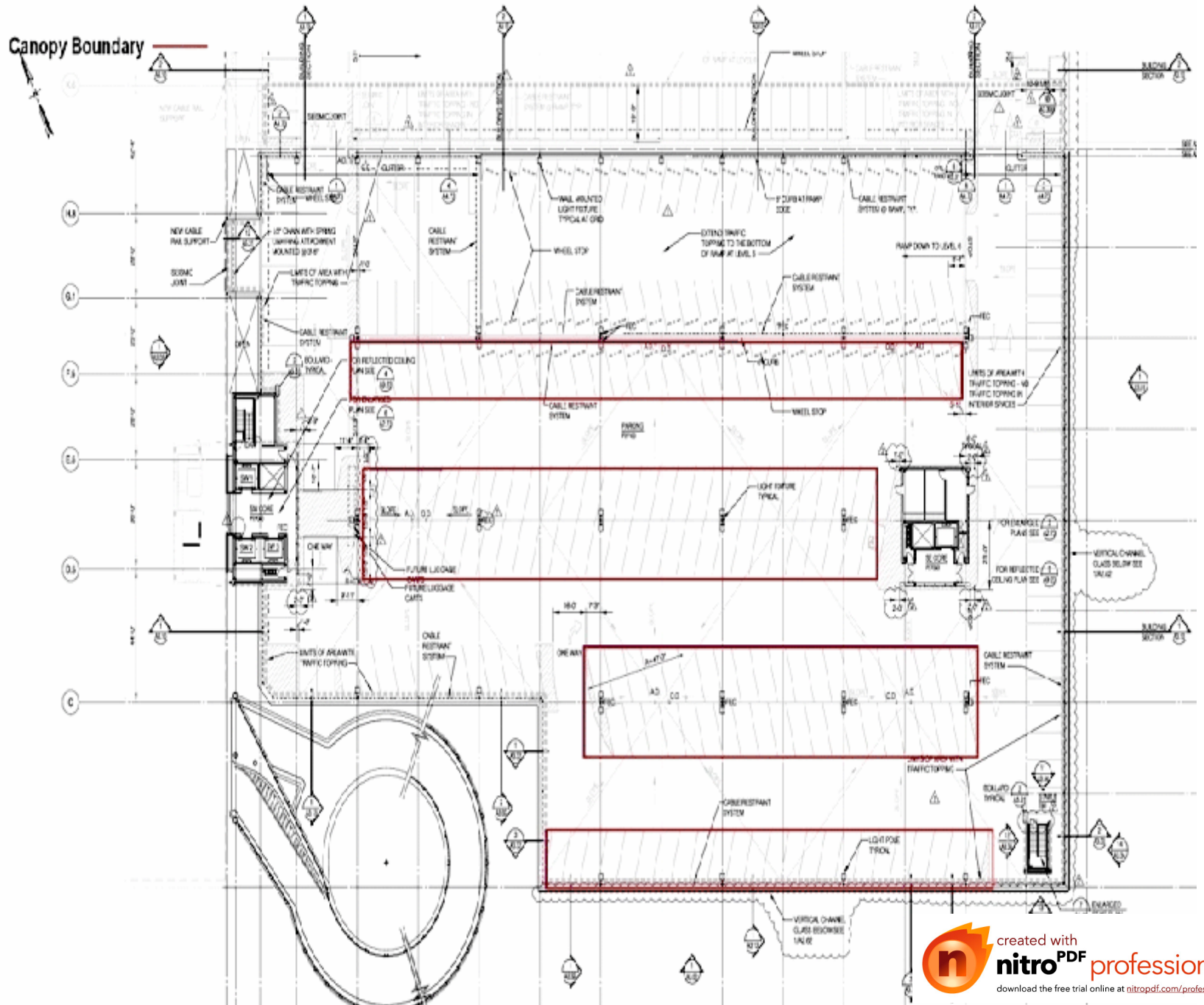
Future Port GHG Reduction Measures

Port Headquarters (2010)

- Ground source heating and cooling
- Extensive day lighting
- Electric hybrid vehicle plug-in stations
- On-site waste water treatment (Living Machine)
- Solar Electricity



Roof of HQ Parking Garage



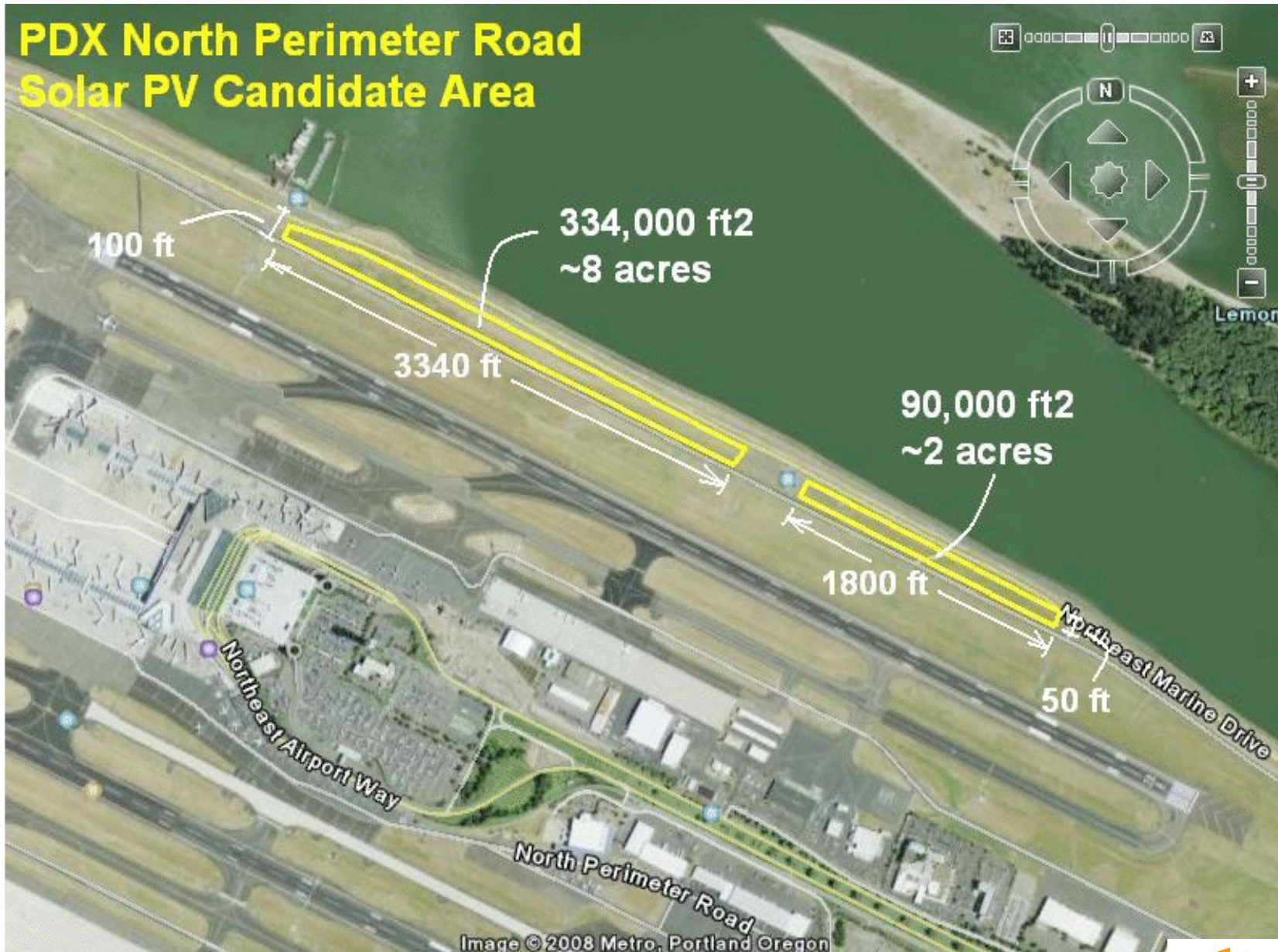
Carbon Footprint Impact with Solar

- 2 MW Solar Power Plant: ~2,200,000 kWh per year = 1,500 tons CO₂ eliminated per year
 - Equivalent to annual CO₂ emissions from :
 - Electricity use from 170 homes
 - 235 passenger cars
 - Equivalent to
 - Carbon sequestered annually by 292 acres of pine or fir forest
 - 9 acres of forest preserved from deforestation



Potential Other Areas

PDX North Perimeter Road Solar PV Candidate Area



Thank You

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