Oregon Department of Environmental Quality

Sustainability in Oregon
State and local efforts

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What do we share?

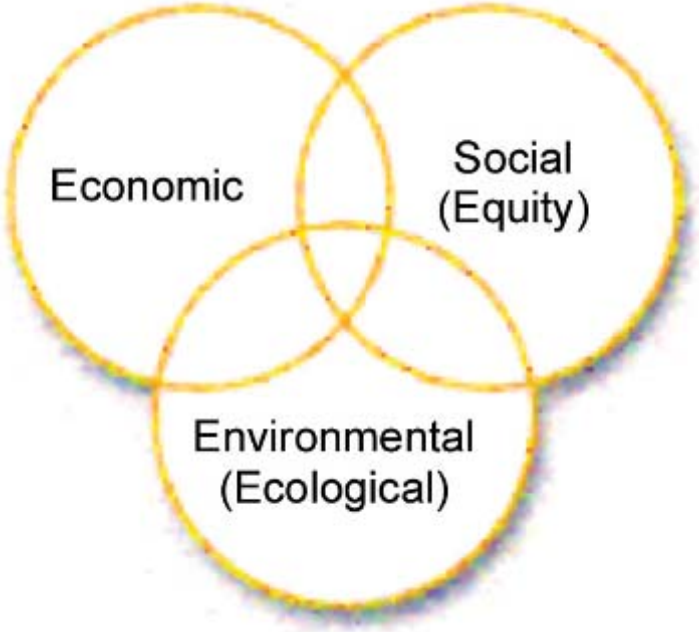
- Fully developed economies
- Difficulty meeting increasing energy and material demands
- Difficulty meeting CO2 emission goals
- Significant legacy pollutants
- Commitment to sustainability and environmental protection

What are we challenged by?

- How to manage global economies to minimize volatility and maintain confidence
- How to manage long-term, large-scale cumulative environmental impacts in a global political setting
- How to create and manage modern sustainable societies

Oregon seeks sustainable development while meeting the future needs related to:

- The environment
- The economy
- Our society



The “Triple Bottom Line”

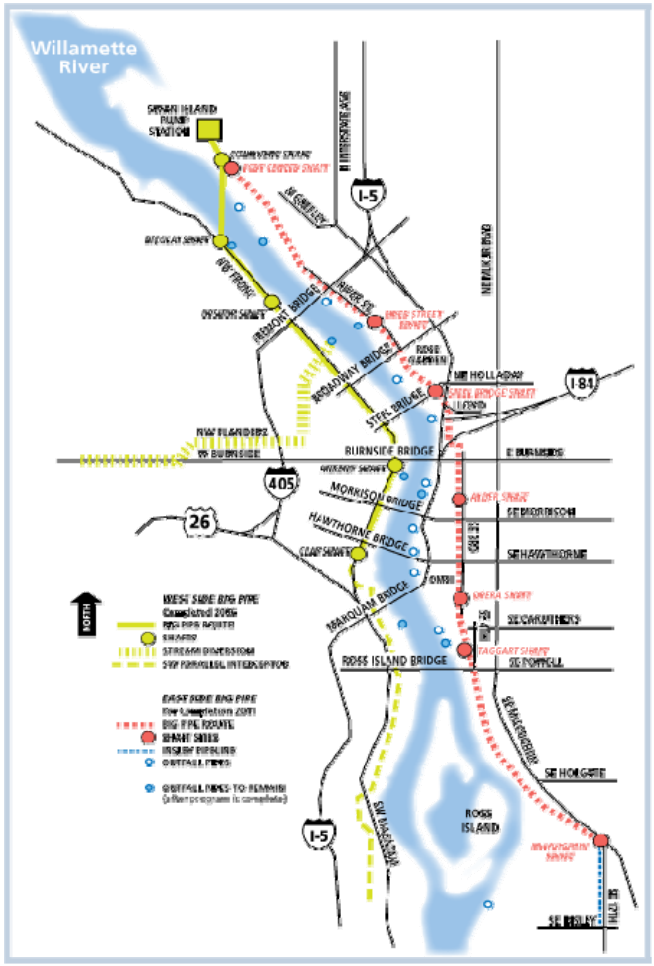
Some On-going Projects and Efforts

Using Recycled Water in Oregon

- Oregon" s recycled water rules:
  - Protects public health by specifying proper setbacks, site management practices, and access and exposure requirements.
  - Identified 4 types of treated effluent from municipal wastewater treatment facilities
  - Identified beneficial uses including: irrigation; industrial, commercial, & construction uses; landscaping uses and artificial groundwater recharge

Contact: Ron Doughten, doughten.ron@deq.state.or.us

City of Portland's "Big Pipe"



Contact: Diana Hinton, dianah@bes.ci.portland.or.us

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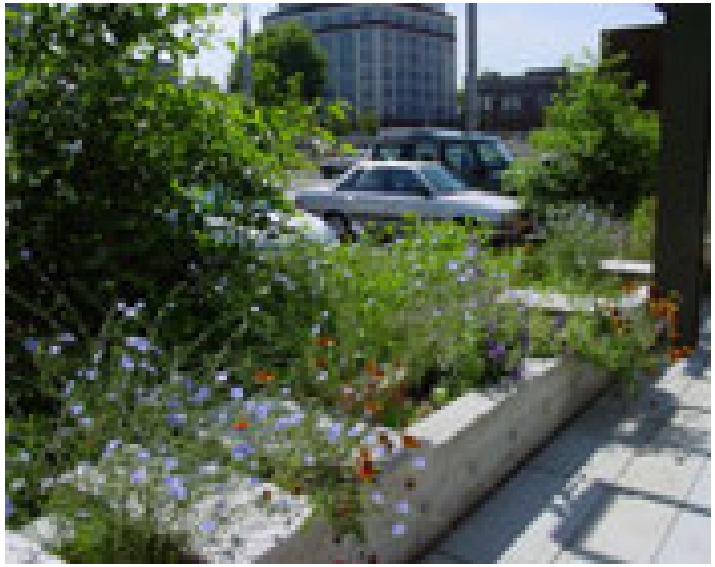
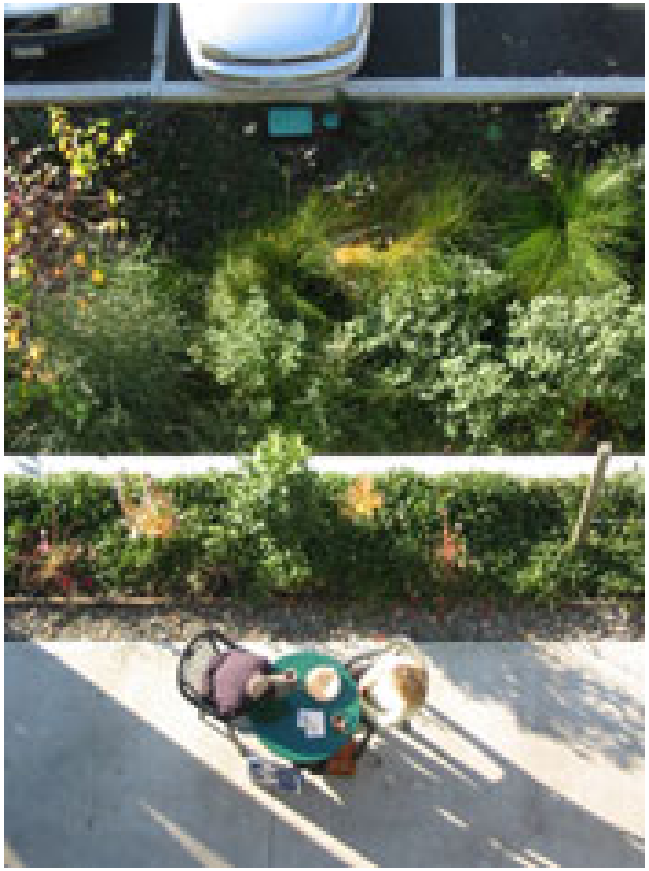
Reducing stormwater runoff using bioswals





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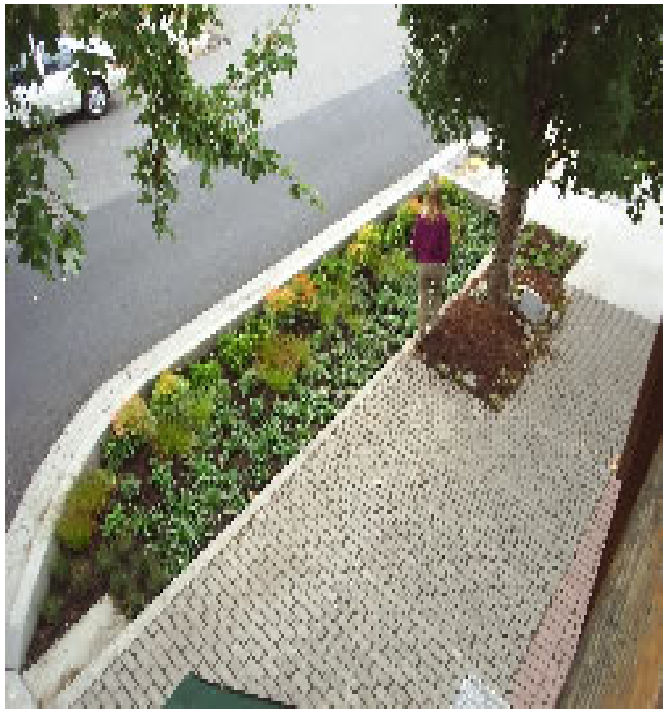
Reducing stormwater runoff using “Green Streets”



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Oregon's Fish Consumption Rate-
Revising Oregon's Water Quality Goals

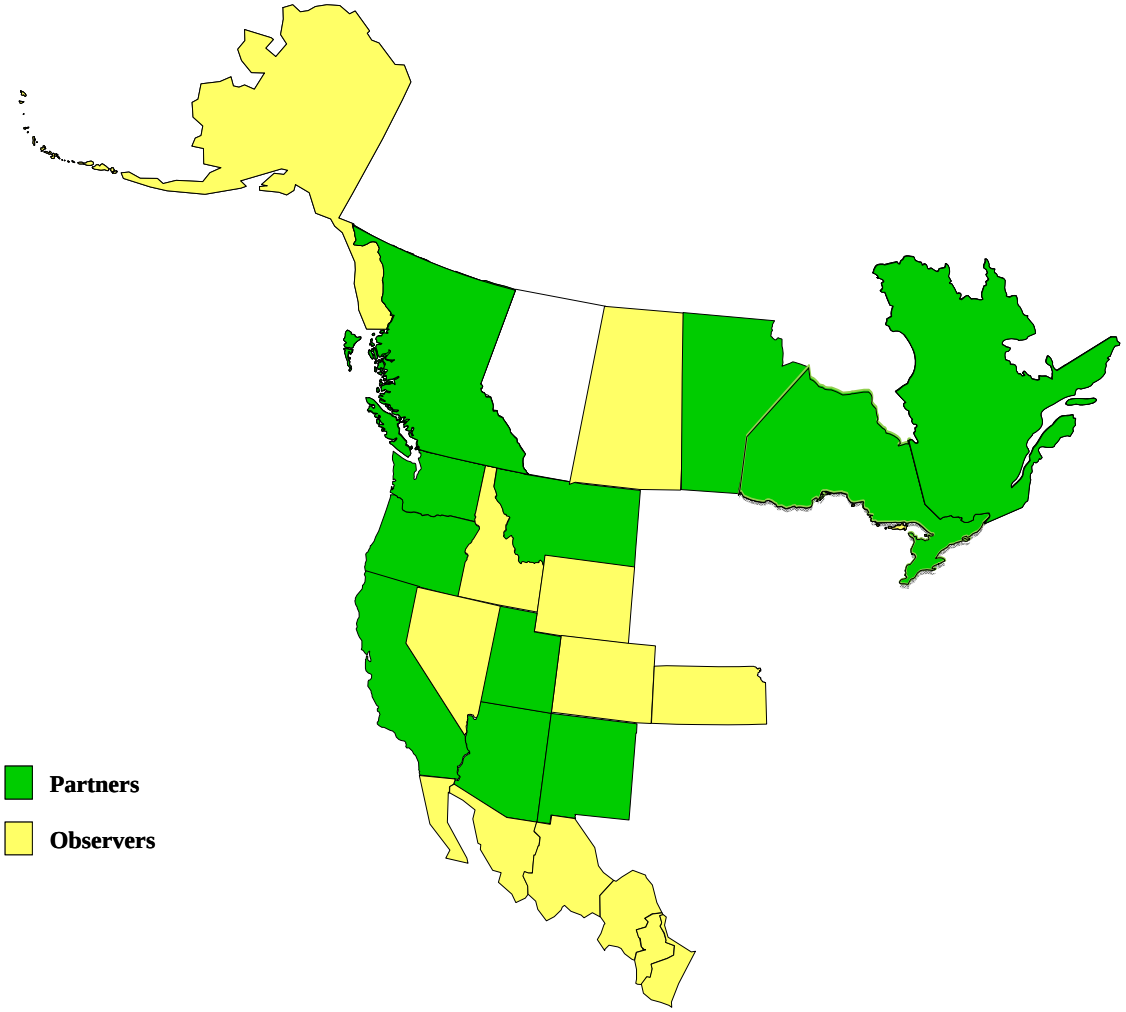
- DEQ worked with Native American governments to revise water quality goals to reflect a daily fish consumption rate of 175 grams—10 times the former rate.

- New goals protective of people who eat fish.

- Stringency of the new water quality standards drives innovation: meaningful and cost-effective ways to reduce toxic pollutants.

Contact: Debra Sturdevant,sturdevant.debra@deq.state.or.us

Climate Change: Western Climate Initiative



2012:

2015:

Contact: Wendy, Simons, simons.wendy@deq.state.or.us

Oregon's Air Toxics Benchmarks

- Develop Air Toxic "Benchmarks":
  - "Acceptable" ambient concentration air toxics levels.

- Develop Measurable Goals – Strategic Planning
  - The air toxics benchmarks serve as measurable progress goals for Oregon's air toxics program.

- Oregon has set benchmarks for 51 air toxics

Contact: Gregg Lande, lande.gregg@deq.state.or.us

Portland Air Toxics Solutions (PATS)

GOAL: Protect public health

DEQ is working with local communities to:

- Evaluate emissions, potential emission reductions, exposures and risks
- Create an emission reduction plan with **10-year goals**

Portland is the first community to create an individual air toxics reduction plan

Contact: Patricia Huback, huback.patricia@deq.state.or.us

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Oregon Clean Diesel Initiative

- Burn cleaner fuel
- Burn fuel cleaner
- Burn less fuel

Contact: Kathleen Cochrun,
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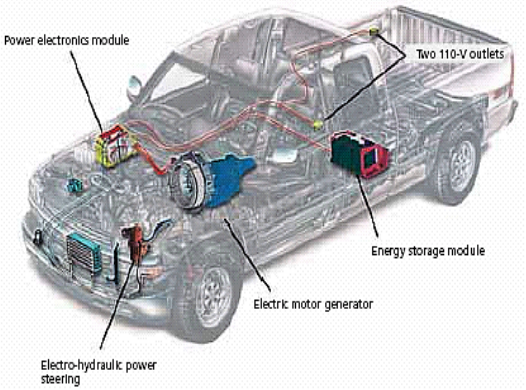
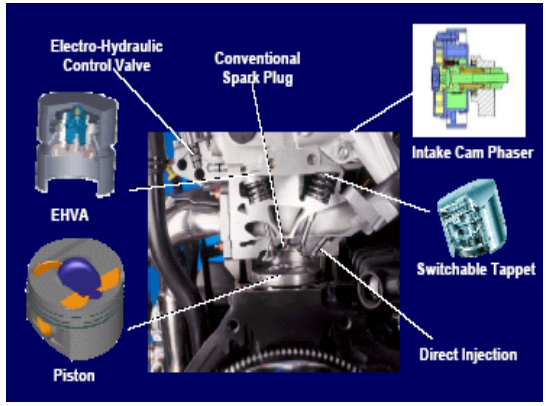
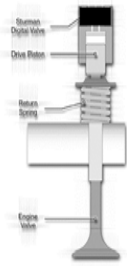
Oregon Low Emission Vehicles



Integrated Starter/Generator

2005 Chevrolet Silverado





AVL Homogeneous Combustion Compression Ignition

Sturman camless valve actuation

Contact: Dave Nordberg,
nordberg.dave@deq.state.or.us

Electric cars

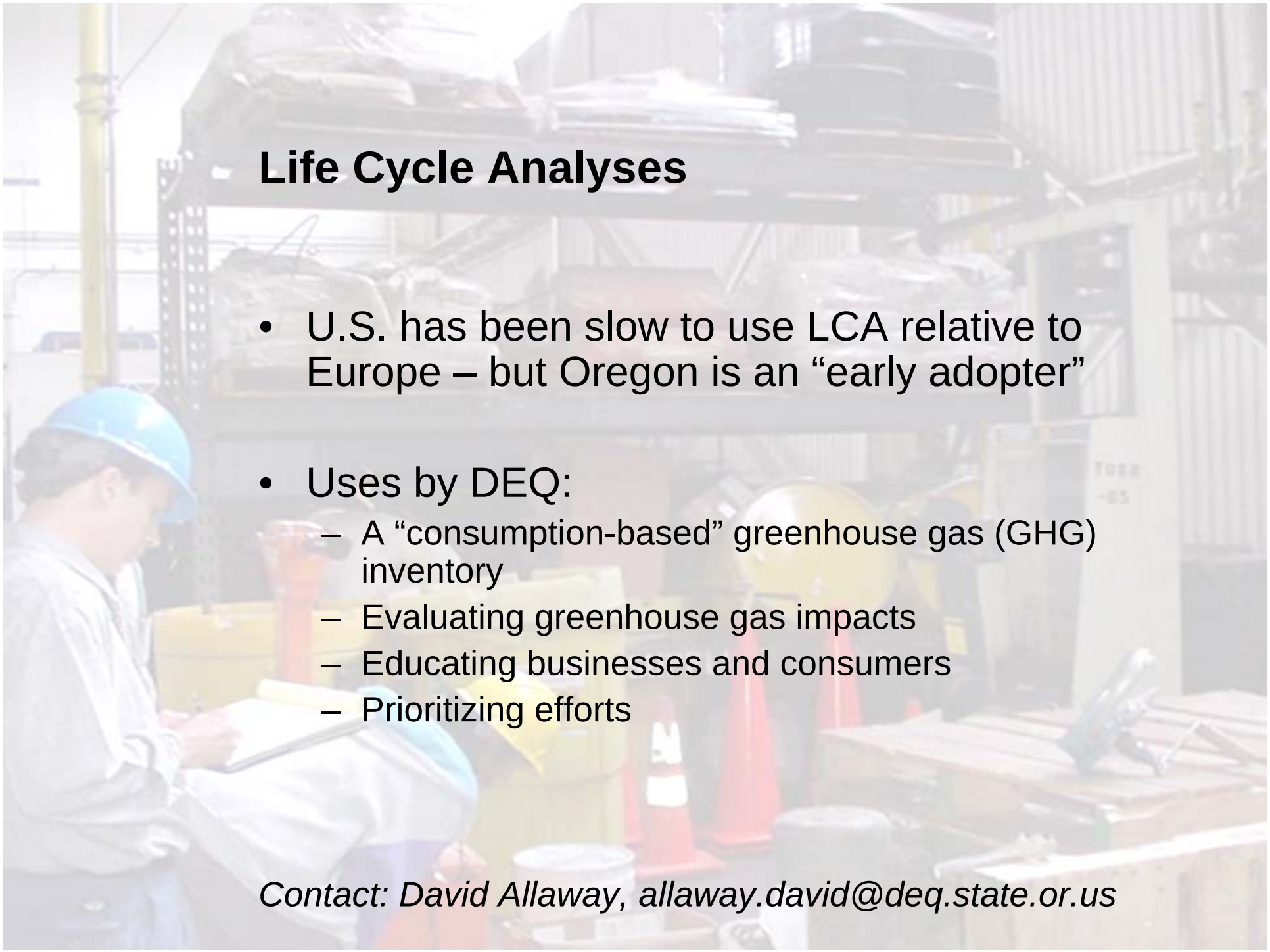
Contact: Steve Corson, steve.corson@pgn.com

Transportation-Air Quality

Integrating transportation, land-use and air quality planning:

- Urban Growth Boundaries and compact urban design
- VMT/capita reduction goals
- Expansion of transit and other alternative modes
- Transportation control measures
- Air quality emission budgets

Urban Growth Boundary for Each City



Life Cycle Analyses

- U.S. has been slow to use LCA relative to Europe – but Oregon is an “early adopter”
- Uses by DEQ:
  - A “consumption-based” greenhouse gas (GHG) inventory
  - Evaluating greenhouse gas impacts
  - Educating businesses and consumers
  - Prioritizing efforts

Contact: David Allaway, allaway.david@deq.state.or.us

Oregon Bottle Bill

- In effect since 1972
- Water bottles added 2009
- Bottle bill container recycling rate: 83%
- Other beverage container recycling rate: 37%

Contact: Peter Spendelow, spendelow.peter@deq.state.or.us

Portland recycling roll carts

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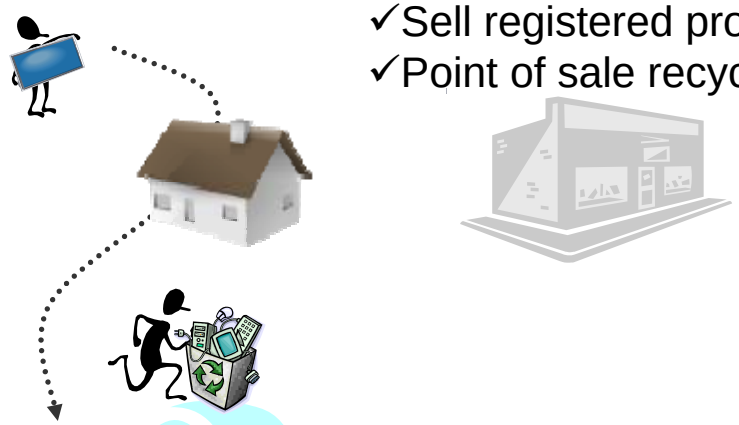
Oregon's Electronics Recycling Program

CONSUMERS
✓Reuse and recycle

RETAILERS
✓Sell registered products
✓Point of sale recycling info



RECYCLERS
✓Manage safely
✓Track downstream

SITES & SERVICES
✓Convenient
✓Statewide
✓All products
✓Reuse options

Collection Sites & Services

RECYCLER

RECYCLER

RECYCLER

Glass
Metals
Plastics

MATERIALS TO MARKET

Energy Recovery
Landfill

RESIDUAL DISPOSAL

Loretta Pickerell, contact
pickerell.loretta@deq.state.or.us

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Environmental Trading

An Innovative Approach to Achieving Environmental Improvements.

Trading has been used in the Tualatin basin in Oregon to offset the impact of point sources on temperature by planting trees along 35 miles of stream.

Butternut Creek 5 years after planting

Contact: Sonja Biorn-Hansen, biorn-hansen.sonja@deq.state.or.us

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Green Buildings

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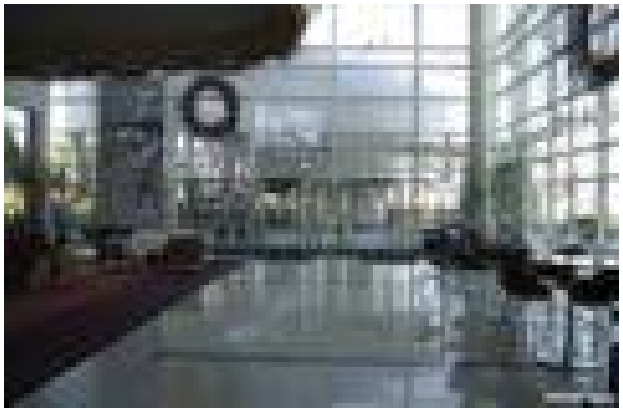

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“Ecoroof” in Portland

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Renewable Energy

Renewable Energy

- 25% of electricity by 2025 (not counting hydro)
- Renewable fuel standard of 10% ethanol
- 10% CO2 reduction over 1990 levels by 2020
- 75% CO2 reduction over 1990 levels by 2050

Oregon Energy

Now	Future
• Coal-2%	• Wind
• Natural gas-20%	• Solar
• Oil-35%	• Wave
• Nuclear-0%	• Biomass
• Hydro-34%	• Hydro
• Biomass-5%	• Natural gas

Oregon's First Wave Energy Generator

We know the sustainable endpoint!

- Majority of populations will live in dense urban environments

We know the sustainable endpoint!

- Energy will primarily come from renewable sources- probably solar and wind.

We know the sustainable endpoint!

- Human transportation will occur primarily by walking, biking, buses and train travel.

We know the sustainable endpoint!

- Economies will focus on green jobs related to :
  - Sustainable food production
  - Non-carbon energy
  - Efficient capital use
  - Education for sustainability
  - Sustainable health care
  - Advanced communication
  - Sustainable transportation
  - Far less “stuff”

Unfortunately, we need to create the path to get to the end point and get there quickly!