Oregon’s Critical Energy Infrastructure (CEI) Hub
Finding the Nexus Between Seismic Risk & Climate Change Adaptation

Seismic Policy

Climate Policy

Jay Wilson, Resilience Coordinator - Clackamas County Disaster Management
The Oregon Resilience Plan

50-year Comprehensive Plan

- Cascadia Earthquake Scenario
- Business/Workforce Continuity
- Coastal Communities
- Information and Communication
- Critical & Essential Buildings
- Water & Wastewater
- Transportation
- Energy

Salem, Oregon
February 2013
October 2013

The Oregon Resilience Plan

Reducing Risk and Improving Recovery for the Next Cascadia Earthquake and Tsunami
Report to the 77th Legislative Assembly
from Oregon Seismic Safety Policy Advisory Commission (OSSPAC)
Salem, Oregon
February 2013

Home
Member Jurisdictions
Alaska
British Columbia
California
Oregon
Washington
Vision
Agreements
Priorities
- Clean Energy
- Low-Carbon Energy
- Energy Efficiency
Emergency Management
Regional Transportation
- Green Ports
- Green Highways
- Rail
Research and Innovation
Sustainable Regional Economy
- Jobs

Pacific Coast Collaborative
Leadership now for a sustainable tomorrow

With a combined population of 52 million and a GDP of $2.5 trillion, Alaska, British Columbia, California, Oregon and Washington are poised to emerge as a mega-region and global economic powerhouse driven by innovation, energy, geographic location and sustainable resource management, attracting new jobs and investment while enhancing an already unparalleled quality of life.

On June 30, 2008, the leaders of the five jurisdictions signed the Pacific Coast Collaborative Agreement, the first agreement that brings together the Pacific leaders as a common front to set a cooperative direction into the Pacific Century. Out of this agreement was born the Pacific Coast Collaborative -- a formal basis for cooperative action, a forum for leadership and information sharing, and a common voice on issues facing Pacific North America.
The Oregon Resilience Plan
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The White House
Office of the Press Secretary

For Immediate Release

November 01, 2013

FACT SHEET: Executive Order on Climate Preparedness

President Obama Establishes a Task Force on Climate

“We’re going to need to get prepared. And that’s why this plan will also protect critical sectors of our economy and prepare the United States for the impacts of climate change that we cannot avoid. States and cities across the country are already taking it upon themselves to get ready. And we’ll partner with communities seeking help to prepare for droughts and floods, reduce the risk of wildfires, protect the dunes and wetlands that pull double duty as green space and as natural storm barriers.” – President Barack Obama, June 25, 2013

Today, President Obama established a Task Force on Climate Preparedness and Resilience to advise the Administration on how the Federal Government can respond to the needs of communities nationwide that are dealing with the impacts of climate change. The Task Force members include state, local and tribal leaders from across the country who will use their first-hand experiences in building climate preparedness and resilience in their communities to inform their recommendations to the Administration.
30 Year Anniversary - Loma Prieta Earthquake
October 17, 1989

Source: Mercury News

Source: ABC

Source: The Chronicle
30 Year Anniversary of the Exxon Valdez Spill
10.8 million gallons of crude oil - March 24, 1989

Eventually, massive clean-up efforts involving thousands of people were undertaken. The final death toll included 250,000 seabirds, almost 3,000 sea otters, 300 harbor seals, 250 bald eagles, 22 killer whales, and billions of salmon eggs. Populations of pacific herring, a cornerstone of the local fishing industry, collapsed. Fishermen went bankrupt.

Source: nationalgeographic.com
HB 2020 - Reduction of greenhouse gas emissions to **80 percent below 1990 levels by 2050**.

Allows utility investment in the inter-connection of RNG production; supports targets of 15% by 2030, 20% by 2035 and **80 percent by 2050**;
Visioning... 30 Years from Now – 2050?

- Electric Buses
- Electric Bicycles and Scooters
- Electric Vans, Trucks and Delivery Vehicles
- Electric and Plug-in Hybrid Automobiles
Portland’s Climate Action Plan provides a road map to reduce carbon emissions 40 percent by 2030 and **80 percent by 2050**.

Land use planning, transportation policies and investments are among the most important strategies to address climate change.
Where do Portland's carbon emissions come from?

- Transportation Sector: 42%
- Commercial Sector: 22%
- Residential Sector: 18%
- Industrial Sector: 14%
- Landfilled Solid Waste: 2%
- Fugitive Emissions: 0.2%
- Wastewater Treatment: 1.4%

2017 Multnomah County Carbon Emissions by Sector

Figure 2: 40 percent of local emissions come from the energy used to run, heat and cool our homes and businesses, and over 40 percent come from transporting people and goods. These proportions have changed as the transportation sector share of local emissions has increased significantly since 2013, when they only accounted for 38 percent of emissions.
Figure 1: Emissions continue to decline from their peak in 2000, despite significant population growth and increase in jobs. Portland has maintained the decoupling of emissions from growth. However, reductions have reached a plateau in recent years.
Portlanders are buying fewer gallons of gasoline today than they did in 1990.

Figure 8: Since 1990 sales of gasoline per person have declined rapidly, the result of more efficient vehicles and more complete and connected neighborhoods that enable better walking, biking, and access to public transit.
Climate Change Student Walkout Protest
Portland - Sept 20, 2019

2020 is the 50th Anniversary of Earth Day
Strategy 2 of 6

Develop a plan for the **Critical Energy Infrastructure Hub** to prevent and mitigate catastrophic failure and ensure fuel supplies and alternative energy resources are available to responders and the public.

OSSPAC to deliver report by end of 2019
Numerous in-service large tanks built prior to 1930s
Majority of fuel tank capacity built prior to 1970s

Risk - Over 500 Tanks with ~ 360 in Use

PBEM/PSU, May 2019
<table>
<thead>
<tr>
<th><strong>Risk - 360 Million Gallons Storage Capacity</strong></th>
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<tbody>
<tr>
<td><strong>Refined Petroleum</strong></td>
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<tr>
<td>- Gasoline</td>
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<td>- Diesel</td>
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<tr>
<td>- Aviation Fuel</td>
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<tr>
<td>- Jet Fuel</td>
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<td>- Marine Fuel Oils</td>
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<td>- Motor Oils</td>
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<td>- Fuel Additives</td>
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<td>- Canadian Tar Sands</td>
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<td>- Bakken</td>
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<td><strong>Gases</strong></td>
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<td>- Butane</td>
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<td>- Propane</td>
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<td>- Liquified Natural Gas</td>
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<td><strong>Other</strong></td>
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<tr>
<td>- Ethanol</td>
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<tr>
<td>- Green Oil/Bio Oil</td>
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</tbody>
</table>

*Source: EPA - Richard Franklin*

Also:
- Ammonia
- Chlorine
Risk - Our Exxon Valdez or Worse!
Only 3% of Volume = 10.8 Million Gallons
- Spill of National Significance
- No timely post-EQ spill response
- Confluence of Willamette and Columbia
- Tidal influence - Range of impacts?
- Environmental catastrophe - decade(s)
- Impede emergency response
- Economic impacts - Legacy?
- And . . . Unknown unknowns?
The Unknown Unknowns?
- No Environmental Impact Analysis Exists
- No Worst-Case Planning for Cascadia

Consulted: July - September 2019
- EPA – Richard Franklin, Federal On-Scene Coordinator
- NOAA – Gary Shigenaka, Marine Biologist, Office of Response & Restoration
- DEQ – Mike Zollitsch, Emergency Response Unit Leader
- DEQ – Paul Seidel, Clean Up Program Manager
- WA Ecology – Ken Esplin, Facility Engineer, Spills Program
- Portland BES – Annie Von Burg, Portland Harbor Superfund
- Portland Water Bureau – Mike Stuhr, Director
- Willamette River Keeper – Travis Williams, Director
PNWA MEMBER LOWER COLUMBIA RIVER PORTS

Columbia Snake River System
The nation’s number one wheat export gateway and number two soybean export gateway is fed by a 365-mile, 14-foot draft inland barge system which stretches from Portland, OR to Lewiston, ID. The system exported over 50 million tons of cargo in 2016. It is also the west coast’s number one wood and mineral bulks export gateway and a rising importer/exporter of vehicles. In all, over $21 billion worth of cargo moves on the Columbia Snake River System each year.

River System Highlights

#1 U.S. wheat exports
#2 U.S. corn and soy exports
#1 West Coast wood exports
#1 West Coast mineral exports
#1 West Coast auto exports

Deep Draft Channel Facts:
- 105 miles, 43 feet deep
- Over 52 million tons of international trade in 2017
- At least $21 billion in cargo value
- 40,000 local jobs are dependent on this trade

Source: Pacific Northwest Waterways Association
Oregon Critical Energy Infrastructure Hub
Silos of Stakeholders

State
- PUC
- DEQ
- DOE
- SFM
- DSL
- DOGAMI
- OSSPAC
- DCBS
- OEM
- ODOT
- OHA
- DLCD

Portland
- Multnomah County
- Other
- Oregon Solutions
- City Club
- Salem
- Eugene
- Metro

Private Fuel
- Kinder Morgan
- BP
- Chevron
- Shell
- ConocoPhillips
- McCall Oil
- Star Oil
- Nu Star
- Williams NW Pipeline
- NW Natural
- Zenith

Fuel Organizations
- Western States Petroleum Assoc.
- American Petroleum Industry
- Oregon Fuels Assoc.

Federal
- EPA
- PHMSA
- FERC
- USCG
- BPA
- DHS
- USGS
- FEMA
- USACE
- NOAA

Regional
- Tribes
- RDPO
- Port of Portland
- Union Pacific
- Audubon
- Willamette River Keepers

Public Interest
- Linnton LEPC
- 350.Org
- OSPIRG Center for a Sustainable Economy

Photo: Jay Wilson
PEAK OIL IS SUDDENLY UPON US

By Tom Randall and Havley Warren
November 30, 2020

https://www.bloomberg.com/graphics/2020-peak-oil-era-is-suddenly-upon-us/?utm_source=pocket-newtab
RESILIENCE IMPERATIVE
How Do We Leverage the CEI Hub Risk in Order to Achieve the 2050 Vision?

- Role of Emergency Managers and Local Officials
- Roles of State and Federal Agencies
- Inform Public Officials and Motivate Public Interest
- Natural Hazard Mitigation Plans
- Pre-Disaster Recovery Planning
- Economic Opportunities
- Environmental Justice
- Social Equity

Community Values