

The CEI Hub

A Threat to our Safety, Environment & Economy

90-95% of Oregon's liquid fuel
100% of PDX airport jet fuel

Photo credit Google Earth

Where is it?

Oregon's Critical Energy Infrastructure (CEI) Hub is a six-mile stretch of facilities on the west bank of the Willamette River in Northwest Portland, OR.



Photo credit Google Earth

What's there?

- Most of Oregon's fuel oil infrastructure
- Some electrical & natural gas infrastructure
- Liquid fuel tanks, pipelines, transfer stations
- Natural gas transmission pipelines
- A liquefied natural gas storage facility
- A high-voltage electrical substation and transmission lines

Major Earthquake Risk

The Hub sits on soil that will lose its ability to support structures during a major earthquake.

The soil will...

- Experience severe ground shaking
- Liquefy (soften & lose strength)
- Spread laterally (permanently shift)

The Hub may also be impacted by...

- Landslides from the western slope
- Seiches (waves that oscillate in water bodies)

The fuel tanks, pipelines, wharves, piers, etc. are old - many were built 100+ years ago.

These older structures do not meet current building codes, and they are not required to unless modified (which is unusual). Even the newer tanks that meet current codes are not built to withstand a subduction zone earthquake.

Examples from the Past

Similar facilities have been damaged in past earthquakes around the globe, resulting in partial or total failure. They have leaked oil, caught on fire, damaged nearby facilities, and cost lives.



Photo credit Aaron Lee, Portland Mercury



Photo credit Mike Zachino, The Oregonian/OregonLive

The Tanks

- Over 500 fuel tanks (~360 in use)
- Potential capacity = over 360 million barrels (Exxon Valdez spilled 10.8 million barrels)

View the [flyover video](#)



Photo credit Aaron Lee, Portland Mercury

Who owns it?

- Arco
- BP West Coast Products
- Chevron Products Company
- Kinder Morgan Liquids Terminal
- McCall Oil and Chemical Corp
- NuStar Energy
- Equilon Enterprises
- Pacific Terminal Services
- Phillips 66
- Zenith Energy
- NW Natural
- Portland General Electric
- Pacificorp

(and some government-owned facilities for Bonneville Power Administration)

The Fuel

- **Refined petroleum:** gasoline, diesel, aviation fuel, jet fuel, marine fuel oils, motor oils, asphalt oil, kerosene, naphtha, fuel additives
- **Crude oils:** Canadian tar sands, bakken
- **Gases:** butane, propane, liquid natural gas
- **Other:** ethanol, green oil/bio oil, ammonia, and chloride

A toxic chemical cocktail



Photo credit Mike Zachino, The Oregonian/OregonLive

Our Nation's Largest Natural Disaster?

If a Cascadia Subduction Zone earthquake were to occur today...



Photo credit Napa County Sheriff's Office



Aliceville, AL - Photo credit John Wathen

Environmental Destruction

Materials would likely release into the air, soil, and rivers. This would have devastating impacts on wildlife and their habitats, as well as water quality. Since the Willamette and Columbia rivers flow with the Pacific Ocean tide, environmental damage would likely extend to the coast. The cleanup process would take decades.

Rippling Economic Loss

Oregon (and the world) would likely suffer significant economic impacts for decades. Losses to the energy sector alone would be financially crippling. Export and import shipping would be disrupted for months to years, impacting key sectors (tourism, construction, forestry, agriculture, manufacturing, transportation, etc.) in Oregon, Washington, Idaho, and beyond.

Delayed Recovery

The Hub normally contains a 3-5 day supply of fuel for the entire state. If pipelines break and the Hub fails, we'll have little ability to move people to safety, remove debris, transport food, water, and medical supplies, etc.

Fire & Airborne Toxins

Chemicals would likely spill, mix, ignite, and release toxic fumes into the air. The Hub is on a wildland urban interface, adjacent to Forest Park and the Linnton community. **Anyone nearby would be in serious danger and everyone in the region would be impacted.**

Slowed Response

Roads, bridges, utilities, and communication systems would likely be damaged or destroyed. Emergency personnel would be unable to access the CEI Hub to quell the unfolding disaster. And throughout the state, responders may be unable to refuel their vehicles once local supplies are gone.

Additionally, chemicals would likely flow throughout the Columbia and Willamette Rivers and then on to the Pacific Ocean. This would impede emergency response via our waterways.