

Resiliency in the Face of Climate Change and Seismic Events



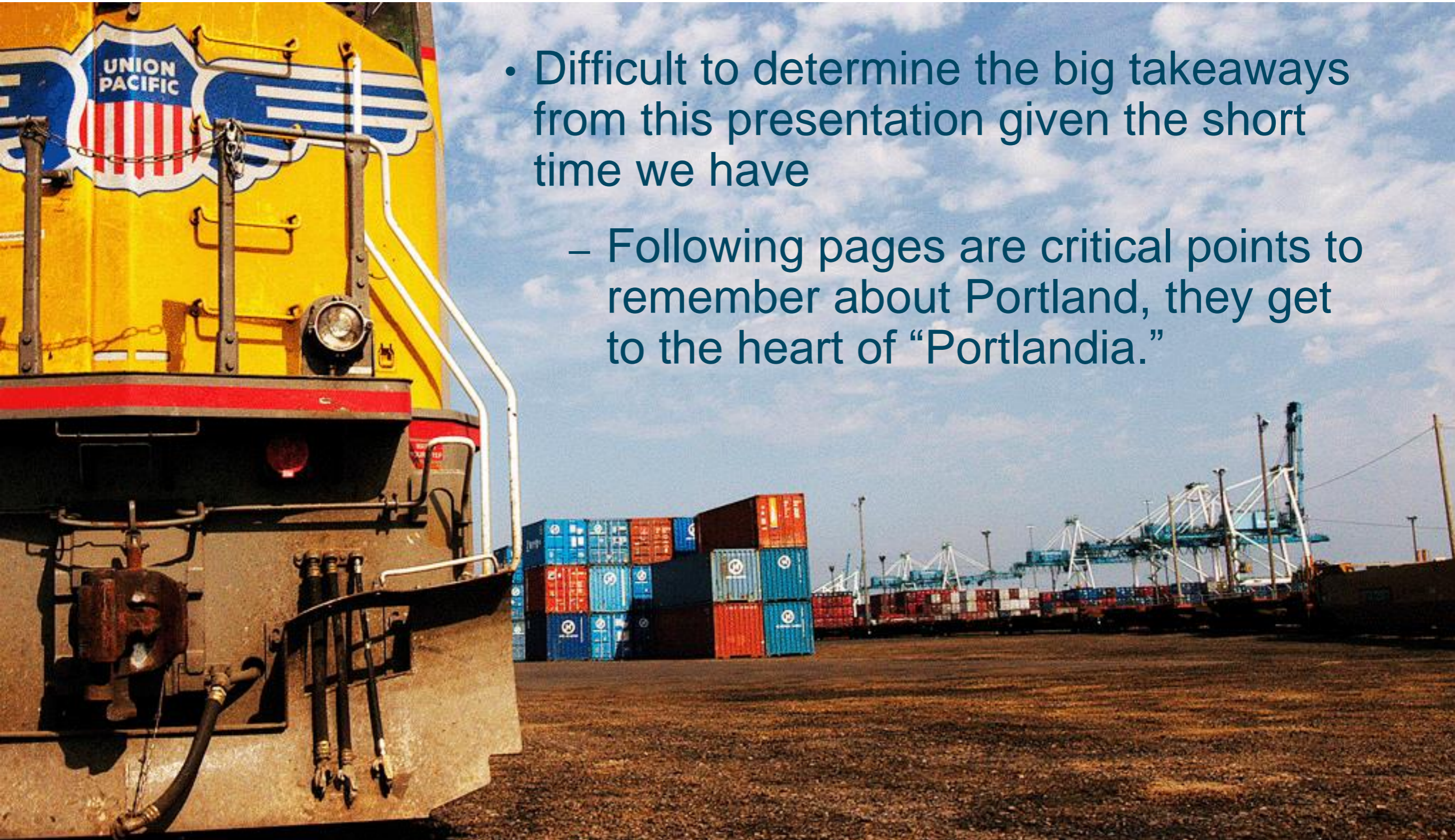
 **PORT OF PORTLAND**
Possibility. In every direction.®

Greg Theisen – Port of Portland
National Working Waterfronts and Waterways Symposium
November 2015

Columbia River



Key Messages of this Presentation



- Difficult to determine the big takeaways from this presentation given the short time we have
 - Following pages are critical points to remember about Portland, they get to the heart of “Portlandia.”

Critical Point #1 – Ice Cream

- Portland, Oregon is number 1 in consumption per capita
 - Each American consumes a yearly average of 22 lbs of ice cream, ice milk, sherbet, ices and other commercially produced frozen dairy products.
 - Average Portland resident consumes 41.7 quarts per year
 - Trending shops
 - Salt & Straw
 - Ruby Jewel
 - Cloud City
 - Cool Moon
 - What's the Scoop
 - Fifty Licks
 - The average number of licks to polish off a single scoop ice cream cone is 50



Source: <http://www.makeicecream.com>

Critical Point #2 – Microbrew Beer

- The City of Portland has 58 breweries, more than any other city in the world.
 - There are 234 brewing facilities in the state of Oregon
 - 39.3% of all beer consumed in Portland is craft beer
 - In 2014, Oregon breweries produced nearly 1,641,000 barrels
 - Oregon is #2 in the nation for the production of hops, #9 for barley
 - 7,400 people are employed at Oregon's breweries
- Some examples of types of Beer
 - Lager (pale, dry, dark)
 - Pilsner (German)
 - Ale (pale, dark)
 - Porter
 - Stout (imperial, Chocolate)

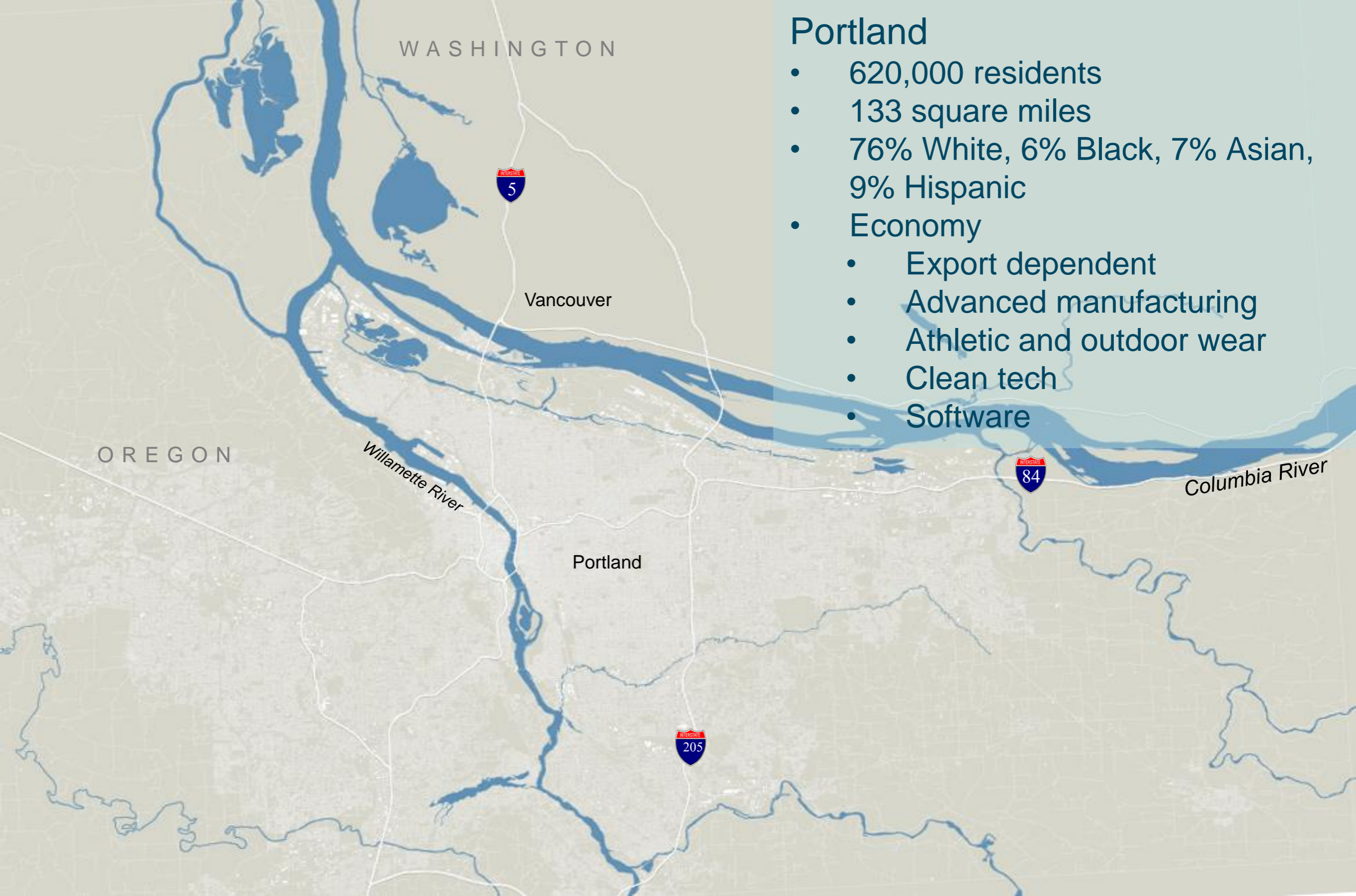


Source: Oregon Brewers Guild, www.oregonbeer.org

Critical Point #3 – Strip Bars

- Portland is home to more strip clubs per capita than any other city in the US – Bar Fly Magazine (www.barflymag.com)
 - “Two things that you can find a lot of in Portland, Ore., are vegans and strip clubs.” – NY Times Article, March 27th, 2008 (www.nytimes.com)
 - “The metro area is home to at least one strip club for every 9,578 resident, arguably more per capita than in any other city in the world.” – Willamette Week Article (www.wwweek.com)
 - In a recent analysis of strip bars per capita, Portland was found to be #1, with Tampa, FL. #2
- Strip clubs are so common, Portland doesn't even boast a designated "red light" district—just about every neighborhood has a strip bar





Portland

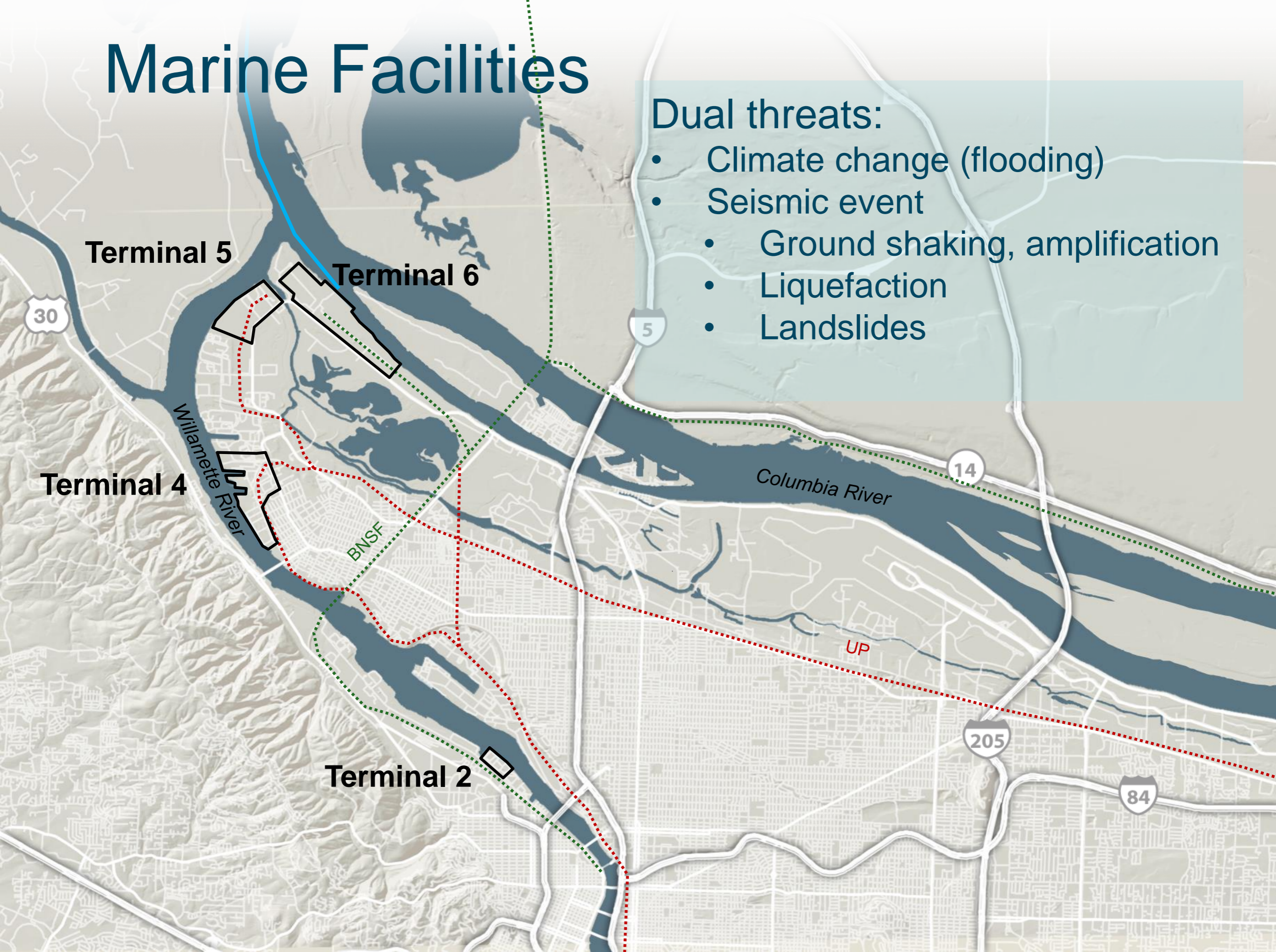
- 620,000 residents
- 133 square miles
- 76% White, 6% Black, 7% Asian, 9% Hispanic
- Economy
 - Export dependent
 - Advanced manufacturing
 - Athletic and outdoor wear
 - Clean tech
 - Software



Marine Facilities

Dual threats:

- Climate change (flooding)
- Seismic event
 - Ground shaking, amplification
 - Liquefaction
 - Landslides



Columbia River Basin

Climate Change Assumptions

- Greater frequency of flood events
- Significance to Port marine facilities
 - Flood control and power generation
 - Treaty considerations
 - Tidal fluctuations
 - River depths
 - Navigation impacts



Seismic Event Assumptions

- Earthquake hazards represent the greatest risk to the Port and the regional economy
- Significant events over past 10 years
 - Sumatra, Christchurch, China, Tohoku, Haiti, Chile, Nepal
- Heightens awareness of resilience
 - Resilient: Japan, Chile
 - Not Resilient: Sumatra, Christchurch, China, Haiti, Nepal



Critical Points Recap: Seismic event planning is the priority

Ice cream, beer and tidal fill lands can all suffer from liquefaction, lateral spread and flooding



Port of Seattle
2001 M 6.8 Nisqually Earthquake

Port of Oakland
1989 M 6.9 Loma Prieta Earthquake



Thank you
There's more to explore in discussion



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Oregon Resilience Plan:

http://www.oregon.gov/OMD/OEM/osspace/docs/Oregon_Resilience_Plan_Final.pdf