

# Fossil Fuel Terminal Zoning Amendments

## Preliminary Code-Change Concepts, May 16, 2016

### Project summary

The Fossil Fuel Terminal Zoning Amendments project would help implement new policy direction on fossil fuel distribution and storage facilities through changes to the Zoning Code. This proposal would restrict the development of *new* bulk fossil fuel terminals. However, proposed code changes would not inhibit *improvements to existing terminals*; they would instead accommodate seismic upgrades, access to greener fuels and capacity for regional growth.

### Code change concepts

1. New land use type - Identify “Bulk Fossil Fuel Terminals” as a specifically regulated land use.
  - Use characteristics: These establishments are engaged in interregional transport and bulk storage of fossil fuels. Terminal activities may also include fuel blending, regional distribution, and wholesaling. Typical facilities have interregional freight access via ship, barge, pipeline or railroad to transport fuels to or from the site, and they have bulk storage scaled for large quantities to serve regional or larger markets. There is minimal on-site sales activity with the customer present. Regional market area varies by product and typically includes Oregon and southern Washington. This definition is intended to include the 11 bulk fossil fuel terminals in NW Portland shown on the table and map below, while not applying to the dozens of smaller fuel distributors in Portland.
  - Definition of fossil fuels: crude oil and refined petroleum products (such as gasoline), natural gas and related gaseous fuels (such as propane), and coal. Petroleum or gaseous products used primarily as raw materials to make other products such as plastics, fertilizer, paint, or other non-fuel products are not included.
    - *How should methanol be classified?* For example, methanol is used primarily for manufacture of plastics and other products, but sometimes is used as a fuel.
  - Examples: crude oil terminals, petroleum products terminals, natural gas terminals, propane terminals, and coal terminals.
  - Exceptions: gasoline stations and other retail sales of fossil fuels, fuel distributors that transport fuels exclusively by trucks, and manufacturers that utilize fossil fuels as an input.
2. Limits on new terminals
  - Proposed code changes would apply to new terminals added after the effective date of the code changes. The code changes are not intended to make existing terminals non-conforming or create an impediment to improvements at existing terminals. Here are three potential options.
    - *Option A: Prohibit new bulk fossil fuel terminals.* This option will not regulate development at existing terminals. It could limit competition among terminals and could preclude new facilities for innovative greener fuels.
    - *Option B: Prohibit new fossil fuel “marine” terminals. Marine terminals would include all fossil fuel export terminals.* This option would allow new terminals with access to pipelines and rail, but preclude river access for barges and tankers.
    - *Option C: Limit the size of storage facilities at new bulk fossil fuel terminal (no size limits on existing terminals). Size limits could vary by fossil fuel type (see table).*

*Potential Size Limits for New Terminals*

<b>Fossil Fuel Type</b>	<b>Maximum Storage Capacity</b>
<i>Petroleum</i>	<i>500,000 barrels</i>
<i>Liquefied Natural Gas (LNG)</i>	<i>7,000,000 gallons</i>
<i>Liquefied Propane Gas (LPG)</i>	<i>7,000,000 gallons</i>
<i>Coal</i>	<i>Prohibited</i>
<i>Other</i>	

*New storage capacity for larger volumes would be prohibited. The capacity limits could be set to effectively preclude the range of recently proposed fossil fuel terminals in the Pacific Northwest, but would allow for growth at existing terminals. Size examples are shown on the table below.*

**Code implementation issues**

- Project timing – This project is expected to be completed by the end of 2016. The timing provides for a prompt response to the changing fossil fuel distribution market and rapid development of fossil fuels in the Western U.S. and Canada. The fast timeline also limits the potential scope of the project.
- Others?

**Code-concept questions for discussion**

1. What issues need to be addressed for this code change to be appropriate and effective? Examples might be special circumstances or locations, unforeseen impacts, fairness considerations, or other concerns.
2. How should fossil fuels be defined in the zoning code? - The proposed code concept specifies fossil fuels by type, including petroleum products (e.g., gasoline), coal, and natural gas and related gaseous fuels (e.g., propane). Petrochemicals used primarily for non-fuel products are excluded, such as plastics, lubricants, fertilizer, roofing, and paints. Should any special inclusions be considered, such as methanol?
3. What zoning approach for limiting terminal storage capacity makes most sense? Option A prohibits all new terminals. Option B only prohibits new marine terminals. Option C allows for new terminals but limits their storage capacity. Do you prefer one of these options or another approach?

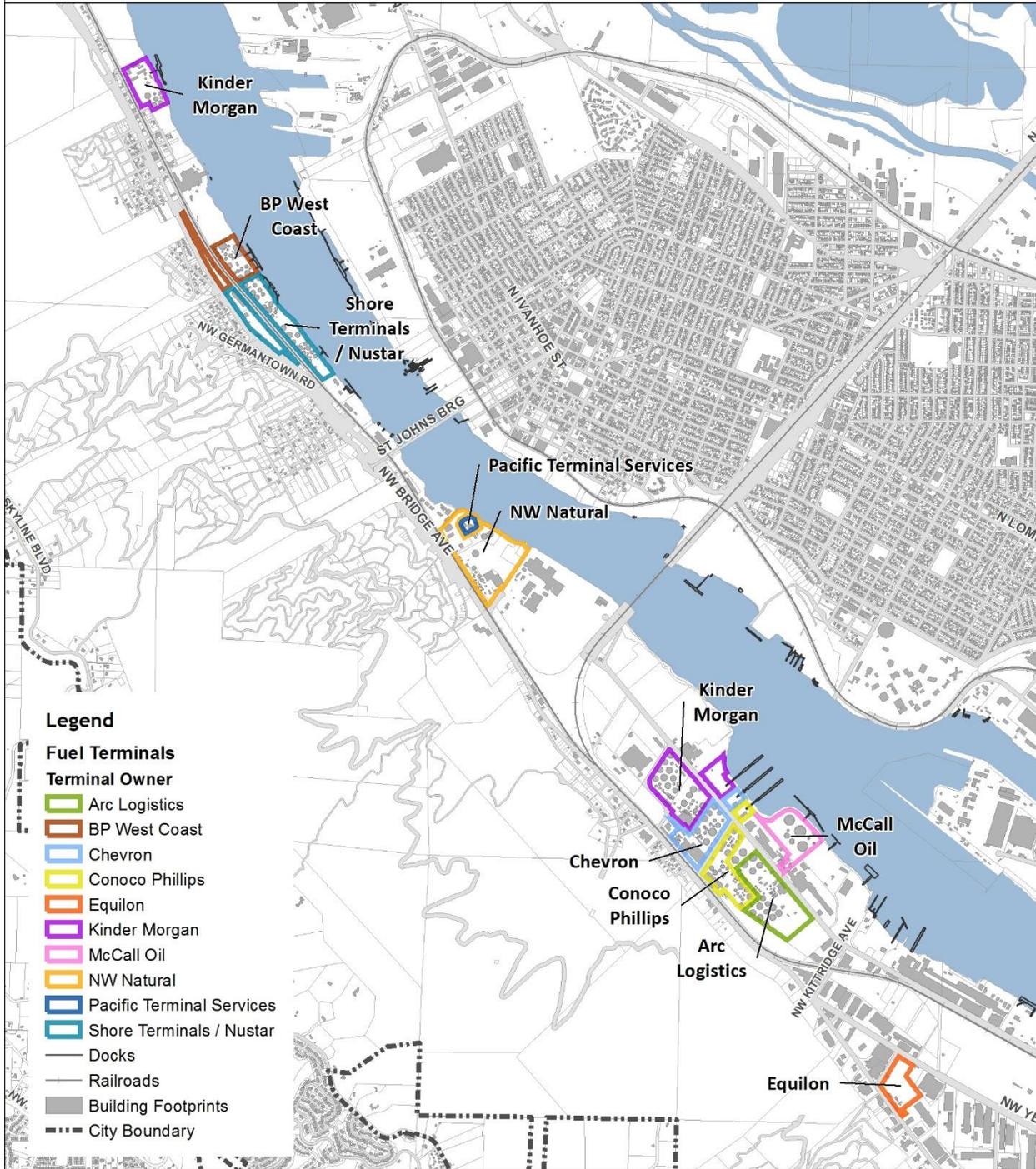
### Estimated storage capacity at existing and proposed bulk fossil fuel terminals

<i>Operator</i>	<i>Facility type</i>	<i>Location</i>	<i>Site acres</i>	<i>Existing Storage</i>	<i>New Storage capacity</i>
<b>Petroleum fuels</b>					
					2035 forecast
Existing Portland terminals				bbls	(1% AAG)
Chevron	Petroleum terminal	NW Portland	21	1,600,000	352,000
Kinder Morgan Willbridge	Petroleum terminal	NW Portland	33	1,551,000	342,000
Arc Logistics	Asphalt/crude oil	NW Portland	39	1,466,000	323,000
NuStar	Petroleum terminal	NW Portland	22	1,191,000	262,000
McCall Oil	Petroleum terminal	NW Portland	19	930,000	205,000
Conoco Phillips	Petroleum terminal	NW Portland	21	760,000	167,000
BP West Coast	Petroleum terminal	NW Portland	18	601,500	132,000
Kinder Morgan Linnton	Petroleum terminal	NW Portland	13	420,000	92,000
Equilon/Shell	Petroleum terminal	NW Portland	38	400,000	88,000
Pacific Terminal Services	Petroleum terminal	NW Portland	2	275,000	61,000
Recently proposed new terminals or reinvestment in Pacific NW				bbls	Proposal
Vancouver Energy	Crude oil terminal	Vancouver WA	47	NA	2,160,000
Imperium Renewables	Biofuels terminal	Grays Harbor WA	11	NA	720,000
NuStar	Petroleum terminal	Vancouver WA	19	775,000	Reuse tanks
<b>Gaseous fuels</b>					
Existing Portland terminals				LNG gal	2035 forecast (1.9% AAG)
NW Natural GasCo	LNG plant/terminal	NW Portland	41	7,000,000	3,200,000
Recently proposed natural gas terminals/storage in Pacific NW				LNG gal	Proposal
Oregon LNG terminal	New LNG terminal	Warrenton OR	96	NA	84,000,000
Jordan Cove LNG	New LNG terminal	Coos Bay OR	400	NA	84,000,000
NW Natural North Mist	Gas reservoir storage	Mist OR	2,644	NA	2.5 Bcf gas
Other recent proposals (now inactive) for gaseous fuel terminals				LPG gal	Proposal
Pembina	Propane terminal	Portland	38	NA	35,000,000
Haven Energy	Propane terminal	Longview WA	24	NA	23,000,000
NW Innovation	Methanol plant	Kalama WA	83	NA	67,000,000
<b>Coal</b>					
Existing Portland terminals					
None					
Recently proposed coal terminals in Pacific NW					Stockpile acres
Millennium Bulk Terminal	Coal terminal	Longview WA	100	NA	~20
Ambre Energy	Coal transload facility	St. Helens OR		NA	no storage
Gateway Pacific Terminal	Coal terminal	Bellingham WA	334	NA	80

*Terminology: bbls = barrels, Dth = decatherms, LNG = liquified natural gas, LPG = liquified propane gas, Bcf = billion cubic feet, AAG = average annual growth.*

*Sources: Oregon DEQ for petroleum tank data. NW Natural 2014 Integrated Resource Plan for existing capacity and forecast. BST, Portland Harbor Forecast (2012) for petroleum terminals.*

# Portland Fuel Terminals



- Legend**
- Fuel Terminals**
- Terminal Owner**
- Arc Logistics
  - BP West Coast
  - Chevron
  - Conoco Phillips
  - Equilon
  - Kinder Morgan
  - McCall Oil
  - NW Natural
  - Pacific Terminal Services
  - Shore Terminals / Nustar
- Docks
  - Railroads
  - Building Footprints
  - City Boundary

May 13, 2016  
 City of Portland, Oregon ||  
 Bureau of Planning and Sustainability ||  
 Geographic Information Systems



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