



The Northwest's Pipeline on Rails

Crude oil shipments planned for Puget Sound, the Washington Coast, and the Columbia River

Updated February 2014

Eric de Place

Summary

Since 2012, nearly a dozen plans have emerged to ship crude oil by train to Northwest refineries and port terminals. Moving large quantities of oil by rail would be a major change for the Northwest's energy economy, but so far the proposals have largely escaped notice.

Most media accounts to date have presented only a fragmented view of the developments, and government regulators are evaluating the projects largely in isolation from one another. This memo presents the first comprehensive, region-wide review of all the oil-by-rail projects planned or currently operating in the Pacific Northwest. It finds that:

- ◆ In Oregon and Washington, 10 refineries and port terminals are planning, building, or already operating oil-by-rail shipments.
- ◆ If all of the projects were built and operated at full capacity, they would put an estimated 11 loaded mile-long trains per day on the Northwest's railway system. Many worry about the risk of oil spills from thousands of loaded oil trains that may soon traverse the region each year.
- ◆ A string of high profile oil train explosions has raised widespread concern about the risks of moving crude oil by rail through populated areas. States and local governments across North America are beginning to seek more information about oil shipments and demand stricter tank car standards from federal regulators.
- ◆ Taken together, the oil-by-rail projects planned for the Northwest would be capable of delivering enough fuel to exceed the region's oil refining capacity. Ironically, two of the facilities that would handle oil by rail were originally built to supply renewable fuels.

- ◆ The projects are designed to transport fuel from the Bakken oil formation in North Dakota, but the infrastructure could also be used to export Canadian tar sands oil. In fact, if all of the oil-by-rail projects were built, they would be capable of moving 785,000 barrels per day—that's more oil capacity than either of the controversial pipelines planned in British Columbia, and nearly as much as the planned Keystone XL pipeline.
- ◆ On Puget Sound, three of the region's five refineries already receive oil-by-rail shipments, and the other three are planning new facilities. Three proposals for Grays Harbor would move oil along the Washington coast. And on the Columbia River, one port terminal is already receiving oil-by-rail shipments, while officials at Vancouver are planning by far the region's largest facility.

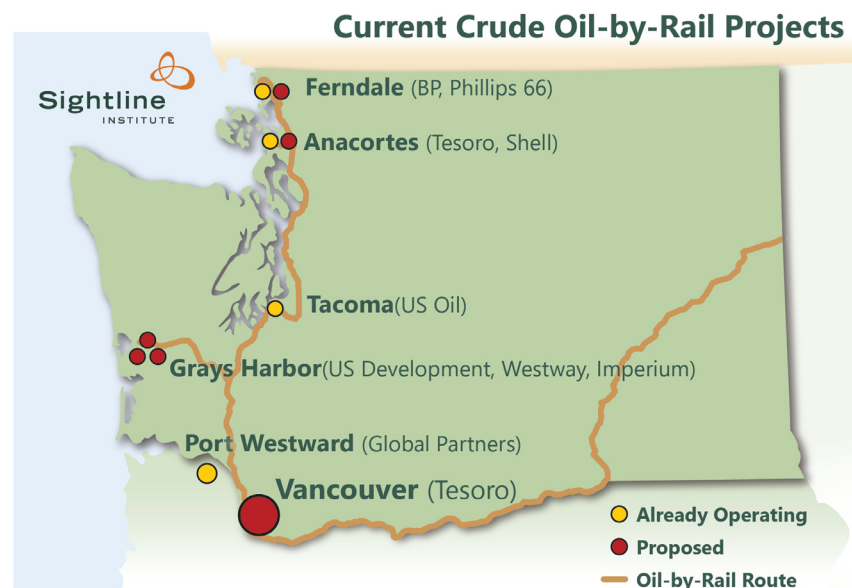
Analysis

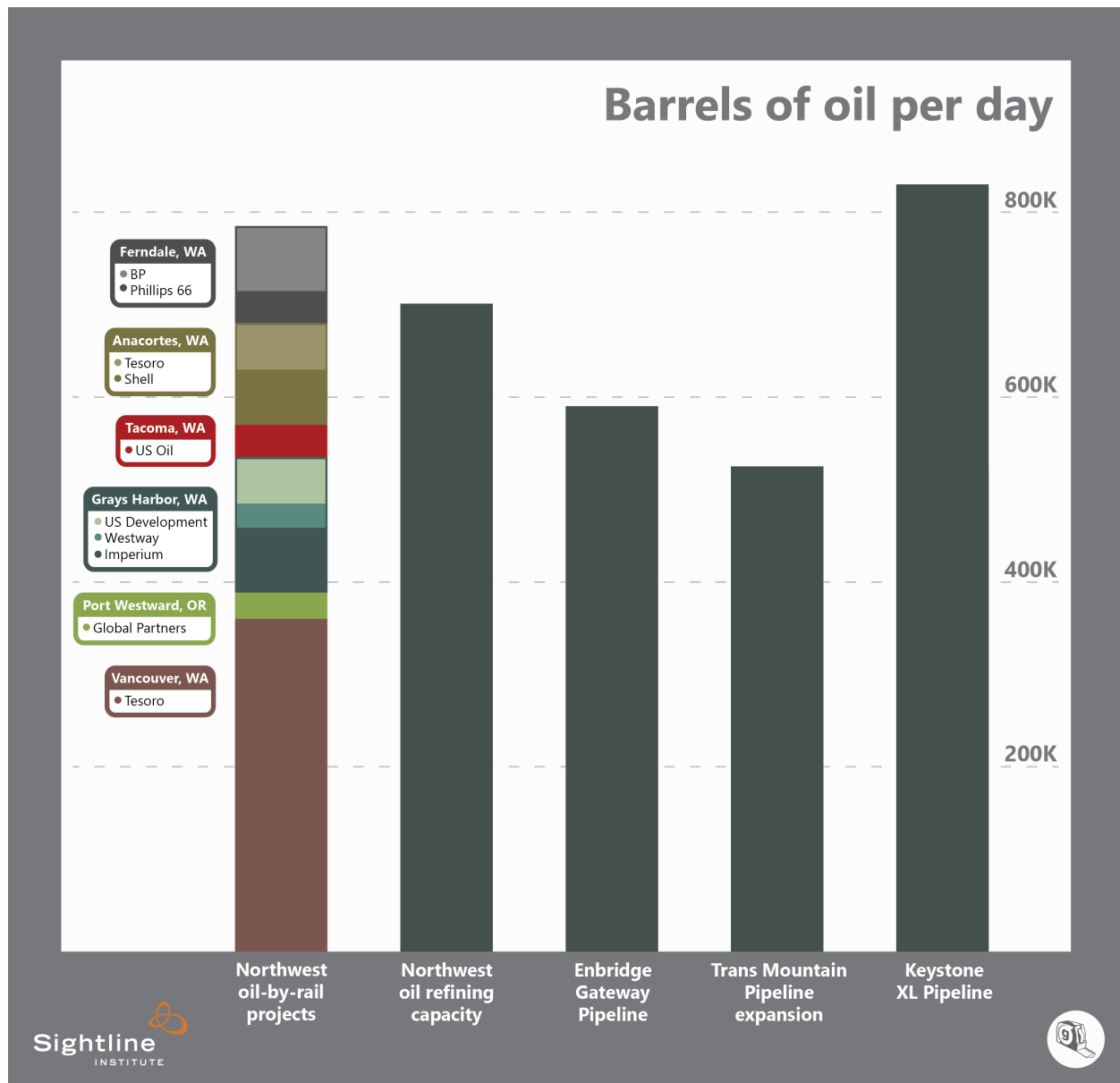
It was clear and sunny on September 4, 2012 when locomotives pulling a hundred uniformly black tanker cars rolled to the shores of Puget Sound. It was the first train bearing crude oil from North Dakota to reach the Northwest coast, and its arrival heralded a new era for the region's place in the global energy economy—one in which the Northwest could become a major oil supplier to Asian markets.¹

The oil had come from beneath the rangeland of western North Dakota, long a quiet and empty place sitting atop a huge oil field known as the Bakken formation. Until recently, the extensive shale oil deposits there were largely untapped because the oil was simply too difficult to extract. But new fracking and drilling techniques allowed oil companies in the Bakken to unleash a gusher of petroleum that is widely considered the most consequential American oil play in decades.

So sudden was the region's oil boom that companies found themselves with scant infrastructure to move the crude to market. Railways seized the opportunity to play a role traditionally reserved for pipelines: moving large volumes of crude oil. The rail industry embarked on a breakneck campaign of building tanker cars as refineries and ports began hatching plans to receive the product from trains.²

Today, oil companies are planning, building, or already operating 10 crude oil-by-rail projects in Oregon and Washington. The destinations include all five Northwest refineries as well as six port terminals. If all of them are built, they would be capable of delivering more than 785,000 barrels of oil per day, a figure that exceeds the region's total oil refining capacity. Taken together, Northwest oil-by-rail projects would have a larger capacity than either of the controversial pipeline expansions in British Columbia—the Enbridge Northern Gateway Pipeline proposal and Kinder Morgan's planned expansion of its Trans Mountain Pipeline.³





Ironically, two of the facilities that would handle oil by rail were originally built to supply renewable fuels. Imperium Renewables at the Port of Grays Harbor, Washington, was promoted to handle biodiesel, but the firm is now planning to expand its facilities to become the region's second largest player in shipping crude oil by rail.⁴ And at Port Westward, near the town of Clatskanie, Oregon, a troubled ethanol facility that was supported by state renewable energy subsidies is already transferring crude oil from trains to vessels on the Columbia River.⁵

The scale of these projects raises concerns about increased freight train traffic on the region's railways. If built and operated at full capacity, the oil-by-rail projects could add more than 11 mile-long trains loaded with oil per day. The Northwest railway system is already overburdened in many locations and is at risk of considerably more congestion if coal export terminals planned for Puget Sound and the Columbia River are developed.⁶

Widespread oil-by-rail shipments also raise concerns about the increased risk of oil spills. In Washington, the state's oil spill response program is funded through a tax on crude oil coming into the state by vessel but not rail. If the state transitions from vessel shipments of Alaskan oil to rail shipments of oil from North Dakota or Canada, it is possible that the program may find itself underfunded.⁷ Industry officials debate the relative safety of shipping oil by rail rather than pipeline, noting that railcar spills tend to be smaller but more frequent.⁸

A string of high profile oil train explosions has raised widespread concern about the risks of moving crude oil by rail through populated areas. A blast in a small town in Quebec killed 47 people in the summer of 2013; since then oil trains mishaps have unleashed towering explosions in Alabama, North Dakota, and New Brunswick. In response, state and local governments across North America are beginning to seek more information about oil shipments and demand stricter tank car standards from federal regulators. In February 2014, the Spokane City Council passed a strong resolution concerning oil trains, demanding more information disclosure and better safety standards, even as the state legislature and the City of Seattle weighed similar measures.

Crude oil-by-rail infrastructure is by no means restricted to serving the Bakken oil fields; it could also act as a vehicle for transporting bitumen from the Canadian oil sands.⁹ Wider use of tar sands oil is currently impeded by serious transport bottlenecks. In Canada, pipelines planned to the Pacific Ocean are facing delay and staunch opposition, while US activists have questioned the wisdom of constructing the Keystone XL Pipeline, which would deliver Canadian oil to the Gulf Coast. Large-scale build-out of oil-by-rail projects in the Northwest could, in effect, serve as a pipeline on wheels for Canadian tar sands.

Regardless of the origin of the crude oil to be shipped by rail, it is not clear where the product is destined. In some cases, oil delivered to West Coast refineries may displace existing supplies of crude such as those from Alaska's North Slope oil fields that currently arrive in tanker vessels. In other cases, the oil may be destined for export to Asia. Under current law, US crude oil can only rarely be exported overseas, but many in the oil industry are calling for Congress to lift the restriction, enabling oil producers to sell American crude oil to China and other countries.¹⁰ Oil from Canada, however, is not subject to the ban, so it is conceivable that Oregon and Washington could become a transshipment hub for tar sands oil headed to Asia.

Although oil-by-rail plans represent a potential transformation of the Northwest's energy economy, most media accounts have presented only a fragmented view of the developments. Moreover, government regulators are evaluating the projects largely in isolation from one another. Until Sightline's original analysis in June 2013, no one has conducted a comprehensive project-by-project assessment of oil-by-rail facilities in the Pacific Northwest.

Findings

	Handling capacity (barrels per day)	Estimated loaded oil trains per day	Status
BP Refinery (Ferndale, WA)	70,000	1.0	Operational
Phillips 66 Refinery (Ferndale, WA)	35,000	0.5	In construction
Tesoro Refinery (Anacortes, WA)	50,000	0.7	Operational
Shell Refinery (Anacortes, WA)	60,000	0.9	Seeking permits
US Oil & Refining (Tacoma, WA)	35,000	0.5	Operational
US Development (Hoquiam, WA)	50,000	0.7	Seeking permits
Westway Terminals (Hoquiam, WA)	26,300	0.4	Seeking permits
Imperium Terminals (Hoquiam, WA)	70,000	1.0	Seeking permits
Tesoro / Savage (Vancouver, WA)	360,000	5.1	Seeking permits
Global Partners (Clatskanie, OR)	28,600	0.4	Operational
Total Operational Capacity	183,600	2.6	
Total Potential Capacity	784,900	11.2	

BP Refinery (Ferndale, WA)

Status: Operational

By far the largest refinery in the Northwest, BP's Cherry Point Refinery is located on Puget Sound. It can refine 230,000 barrels of oil per day. Plant managers built a \$60 million railcar receiving and unloading facility that enables the refinery to accept 70,000 barrels of oil per day. It began receiving oil trains in December 2013.¹¹

Phillips 66 Refinery (Ferndale, WA)

Status: In construction

Capable of processing 100,000 barrels of oil per day, the Phillips 66 Ferndale refinery is located on Puget Sound just south of Cherry Point. It is set to build a rail car receiving facility that will allow the plant to take 35,000 barrels of oil per day. Refinery officials hope to complete work by December 2014.¹²

Tesoro Refinery (Anacortes, WA)

Status: Operational

Tesoro's Anacortes Refinery sits on Puget Sound at March Point near Anacortes. Capable of refining 120,000 barrels per day, the company completed a \$60 million rail improvement project in 2012 that allows it to receive 50,000 barrels of oil per day by railcar.¹³

Shell Refinery (Anacortes, WA)

Status: Seeking permits

The second largest refinery in the Northwest, with a capacity of 145,000 barrels per day, Shell's Puget Sound Refinery is located just south of the Tesoro Refinery at Anacortes. Officials there are planning a new rail loop and offloading facility that will enable it to handle 60,000 barrels per day of crude oil delivered by train.¹⁴

US Oil Refinery (Tacoma, WA)

Status: Operational

Located at the Port of Tacoma, US Oil and Refining Company operates the smallest of the Northwest refineries, with a rated capacity of 39,000 barrels per day. In 2012, the plant spent \$8 million building a new rail yard. Based on statements from government and refinery officials, Sightline estimates that the facility currently accepts 35,000 barrels of crude oil per day brought in on trains.¹⁵

US Development Group (Hoquiam, WA)

Status: Seeking permits

The US Development Group is planning to spend \$80 million constructing a facility at the Port of Grays Harbor's Terminal 3. Plans call for receiving 50,000 barrels of crude oil per day by rail, storing it on site in tanks, and transferring it to barge or vessel.¹⁶

Westway Terminals (Hoquiam, WA)

Status: Seeking permits

Westway's Grays Harbor Terminal is located at the Port of Grays Harbor where it currently operates a methanol handling facility. Westway is planning to spend \$50 million building four additional storage tanks, each big enough to store 200,000 barrels of oil, which will enable the company to handle 26,300 barrels of oil per day received by trains, store it on site, and load it onto barges or vessels. The company hoped that the site would be operational by January 2014, but legal appeals of the permits have delayed operations.¹⁷

Imperium Terminals (Hoquiam, WA)

Status: Seeking permits

Imperium, a renewable fuels producer, is exploring a crude oil handling facility at the Port of Grays Harbor at the firm's existing site at Terminal 1. The company is proposing to spend \$45 million constructing nine 80,000 gallon storage tanks and other facilities by 2014. Based on rail and vessel traffic estimates reported in news accounts, Sightline estimates that the site is likely to have a capacity of at least 70,000 barrels per day if it is completed. As with the Westway project, legal appeals have delayed construction.¹⁸

Tesoro / Savage (Vancouver, WA)

Status: Seeking permits

The most ambitious crude oil transshipment scheme in the Northwest is Tesoro's plan to partner with Savage Companies to develop a \$75 to \$100 million rail complex at the Port of Vancouver. The facility would be capable of handling as much as 360,000 barrels per day. Company officials hope that the site is operational by 2014.¹⁹

Global Partners (Clatskanie, OR)

Status: Operational

Global Partners purchased a former ethanol plant at Port Westward on the Columbia River. Operators are currently receiving trainloads of crude oil, storing it on site in two 3.8 million gallon tanks, and loading it onto vessels or barges. Based on information provided by the Oregon state agency charged with emergency oil spill response, Sightline estimates that the facility receives more than 28,000 barrels per day.²⁰

Acknowledgements

Research for this report relied heavily on high-quality journalism in the Northwest. In addition, I benefited from thoughtful review and new insights from Curt Hart, Brett VandenHeuvel, Matt Krogh, Kristen Boyles, Clark Williams-Derry, Mark Glyde, Lauren Goldberg, and Arthur (R.D.) Grunbaum. Any errors of fact, calculation, or interpretation are my own. Thanks to Pam MacRae for editing, Nicole Bernard for layout and design, and GoodMeasures.biz for designing the bar graph. Photo of Westbound oil train, Essex MT, by [Roy Luck](#).

Sightline Institute is a not-for-profit research and communications center—a think tank—based in Seattle. Sightline's mission is to make the Northwest a global model of sustainability—strong communities, a green economy, and a healthy environment.

Eric de Place is Policy Director at Sightline Institute where he leads work on energy and climate policy. You can reach him at eric@sightline.org.

Methods and Sources

Capacity handling figures are rounded to the nearest one hundred barrels per day. Oil volume figures given in this report represent a snapshot view of activities and plans as of February 2014 and are based on the best data currently available at the time of publication.²¹

Sightline's analysis does not include the Phillips 66 project at Tacoma's Targa Terminals, which was withdrawn in 2013, nor does it include more speculative proposals at Longview, Washington and Prince Rupert, British Columbia. Train volumes are generic estimates by Sightline and not necessarily derived from project documents. Consistent with reports in popular media and industry publications, Sightline assumes that a single railcar carries 700 barrels of oil and that an oil train consists of 100 railcars, which means that each train carries 70,000 barrels of oil.²²

1. Weather from Wunderground, "Historical Weather," <http://www.wunderground.com/history/>. Date from Scott Learn, "Oil trains – pipelines on wheels – headed to Northwest terminals and refineries from North Dakota fracking," Oregonian, May 13, 2013, http://www.oregonlive.com/environment/index.ssf/2013/05/oil_trains_--_pipelines_on_whe.html; and Mark Stayton and Kate Martin, "Shell considers rail loop for Bakken crude," March 30, 2013, http://www.goskagit.com/all_access/shell-considers-rail-loop-for-bakken-crude/article_117f6919-350e-539d-b38d-4c8bb694aebf.html.
2. "Technology-Based Oil and Gas Plays: Shale Shock! Could There Be Billions in the Bakken?" US Energy Information Administration, November 2006, <http://www.eia.gov/ftproot/features/ngshock.pdf>; and Charles C. Mann, "What If We Never Run Out of Oil?" The Atlantic, May 2013, <http://www.theatlantic.com/magazine/archive/2013/05/what-if-we-never-run-out-of-oil/309294>. Significance of Bakken from Richard Manning, "Bakken Business," Harper's Magazine, March 2013, <http://harpers.org/archive/2013/03/bakken-business/>; and Edwin Dobb, "The New Oil Landscape," National Geographic, March 2013, <http://ngm.nationalgeographic.com/2013/03/bakken-shale-oil/dobb-text>. Building from Yadullah Hussain, "Demand for tank cars to ship crude oil by rail rises at breakneck speed," Financial Post, February 22, 2013, <http://business.financialpost.com/2013/02/22/demand-for-tank-cars-to-ship-crude-oil-by-rail-rises-at-breakneck-speed>.
3. Eric de Place, "Northwest Fossil Fuel Exports," Sightline Institute, May 2013, <http://www.sightline.org/research/northwest-fossil-fuel-exports/>.
4. Imperium Renewables, "About: Company Background," <http://www.imperiumrenewables.com/about.html>.
5. Scott Learn, "Ethanol plant in Clatskanie, built with \$36 million in Oregon loans and credits, now shipping crude oil," Oregonian, May 13, 2013, http://www.oregonlive.com/environment/index.ssf/2013/05/former_ethanol_plant_in_clatsk.html.
6. Eric de Place, "Coal Trains and Rail Congestion," Sightline Daily, September 21, 2011, <http://daily.sightline.org/2011/09/21/coal-trains-and-rail-congestion/>; and Eric de Place, "How Coal is Already Congesting Washington's Railways," Sightline Daily, October 24, 2011, <http://daily.sightline.org/2011/10/24/how-coal-is-already-congesting-washingtons-railways>.
7. Oil spill response program from conversations with Kristen Boyles, Earthjustice, May 2013; and Washington Department of Revenue, "Oil spill response tax and oil spill administration tax," http://dor.wa.gov/content/findtaxesandrates/othertaxes/tax_oilspill.aspx.
8. Stephen Ewart, "Better data would aid pipeline-rail safety debate," Calgary Herald, May 28, 2013, <http://www.calgaryherald.com/business/energy-resources/Ewart+Better+data+would+pipeline+rail+safety/8442771/story.html>. Sightline Daily blog series, "The Northwest Pipeline on Rails," http://daily.sightline.org/blog_series/the-northwests-pipeline-on-rails; and Justin Giovanetti, Grant Robertson, and Jacquie McNish, "As Lac-Mégantic death toll reaches 47, safety board calls for immediate rail-safety changes," The Globe and Mail, July 19, 2013, <http://www.theglobeandmail.com/news/national/investigators-urge-ottawa-to-make-changes-to-problematic-railway-safety-rules/article13320031>; Jonathan Brunt, "Spokane City Council seeks oil train scrutiny," February 4, 2014, <http://www.spokesman.com/stories/2014/feb/04/spokane-city-council-seeks-oil-train-scrutiny/>; and Washington

- State Legislature, “HB 2347–Enhancing the safety of the transportation of oil,” 2013-14, <http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2347&year=2014>.
9. Platts, “New Crudes, New Markets,” March 2013, <http://www.platts.com/IM.Platts.Content/InsightAnalysis/IndustrySolutionPapers/NewCrudesNewMarkets.pdf>; Chester Dawson, “IEA: Crude-by-Rail from Canada No Substitute for Keystone XL,” Wall Street Journal, May 14, 2013, <http://blogs.wsj.com/canadarealtime/2013/05/14/iea-crude-by-rail-from-canada-no-substitute-for-keystone-xl>; Lisa Hymas, “No Keystone XL? Big Oil will just take the train,” Grist, November 29, 2012, <http://grist.org/climate-energy/no-keystone-xl-big-oil-will-just-take-the-train>; and Justin Williams, “Tesoro Crude Oil Rail Venture,” Energy & Capital, April 24, 2013, <http://www.energyandcapital.com/articles/tesoro-nysetso-crude-oil-rail-venture/3316>.
 10. Oil-by-rail shipments possibly destined for export from Angelo Bruscas, “Two companies want to export oil from the Harbor,” The Daily World, November 25, 2012, <http://thedailyworld.com/sections/news/local/two-companies-want-export-oil-harbor.html>. Calls to end the ban from, among others, Margaret Ryan, “US Crude Oil Exports Could Make Sense Says EIA Head,” Breaking Energy, June 28, 2012, <http://breakingenergy.com/2012/06/28/us-crude-oil-exports-could-make-sense-says-eia-head>; and “End the Export Ban,” Oil & Gas Journal, March 18, 2013, <http://www.ogj.com/articles/print/volume-111/issue-3b/regular-features/editorial/end-the-export-ban.html>.
 11. BP, “Refineries,” <http://www.bp.com/sectiongenericarticle.do?categoryId=9050573&contentId=7085114>; John Gillie, “Oil boom resonates in South Sound,” Tacoma News Tribune, November 25, 2102, <http://www.thenewstribune.com/2012/11/25/2379662/oil-boom-resonates-in-south-sound.html>; and David Shaffer, “Jumping aboard the North Dakota oil-by-rail shipping boom,” Minneapolis Star Tribune, January 19, 2013, <http://m.startribune.com/business/?id=187528731>. Whatcom County, Planning and Development Services, “SEPA Mitigated Determination of Nonsignificance (MDNS)” for BP West Coast Products, LLC, October 18, 2012, <http://www.co.whatcom.wa.us/pds/plan/sepa/pdf/sep2012-00059-sepa-packet-mdns-20121018-part1.pdf>. John Stark, “Groups seek closer review of Whatcom County rail shipments of crude oil,” Bellingham Herald, January 30, 2014, <http://www.bellinghamherald.com/2014/01/30/3447194/groups-seek-closer-review-of-whatcom.html>.
 12. Phillips 66, “Refining: Western United States and Asia Refining,” December 31, 2011, <http://www.phillips66.com/EN/about/our-businesses/refining-marketing/refining/Pages/index.aspx>; and Kristen Hayes, “Phillips 66 seeks permit for facility to receive crude by rail,” 4-Traders, April 3, 2013, <http://www.4-traders.com/PHILLIPS-66-10447684/news/Phillips-66-seeks-permit-for-facility-to-receive-crude-by-rail-16604359/>. Whatcom County, Planning and Development Services, “SEPA Mitigated Determination of Nonsignificance (MDNS)” for Phillips 66 Company Ferndale Refinery, April 29, 2013, <http://www.co.whatcom.wa.us/pds/plan/sepa/pdf/sep2013-00005-sepa-packet-mdns-20130429.pdf>.
 13. Tesoro, “Tesoro Anacortes Refinery,” <http://www.tsocorp.com/TSOCorp/ProductsandServices/Locations/RefineryLocations/001545>; and Mark Stayton and Kate Martin, “Shell considers rail loop for Bakken crude,” March 30, 2013, http://www.goskagit.com/all_access/shell-considers-rail-loop-for-bakken-crude/article_117f6919-350e-539d-b38d-4c8bb694aebf.html. Some media accounts have put the construction costs at \$55 million, e.g. John Gillie, “Oil boom resonates in South Sound,” Tacoma News Tribune, November 25, 2102, <http://www.thenewstribune.com/2012/11/25/2379662/oil-boom-resonates-in-south-sound.html>. Skagit County, Planning and Development Services, “Mitigated Determination of Nonsignificance (MDNS) and Notice of Decision” for Tesoro Refining and Marketing Company, October 6, 2011; and Curt Hart, Communications Manager, Washington Department of Ecology.
 14. Shell, “About Shell Puget Sound Refinery,” <http://www.shell.us/aboutshell/projects-locations/puget-sound/about.html>; and Skagit County, Planning and Development Services, “Predevelopment Meeting Application” August 22, 2013, <http://www.scribd.com/doc/163737250/Shell-SkagitCounty-PreDevelopmentMeetingApplication-2013-08-22>.
 15. John Gillie, “Oil boom resonates in South Sound,” Tacoma News Tribune, November 25, 2102, <http://www.thenewstribune.com/2012/11/25/2379662/oil-boom-resonates-in-south-sound.html>; Marcia E. Nielsen, manager at US Oil; and US Oil & Refining Co., “About US Oil,” <http://www.usor.com/about/about>; and Curt Hart, Communications Manager, Washington Department of Ecology.
 16. Port of Grays Harbor, “CBR Fact Sheet,” January 30, 2013, http://www.portofgraysharbor.com/downloads/crude-by-rail/CBR_Fact_Sheet.pdf; and US Development Group, “Grays Harbor Rail Terminal (GHT) Proposed Facility at Port of Grays Harbor: Frequently Asked Questions,” http://www.portofgraysharbor.com/downloads/crude-by-rail/USD_FAQ.pdf.

17. Westway Terminals, “Grays Harbor, WA”, http://www.westwayterminal.com/location_us_graysharbor.htm; Port of Grays Harbor, “CBR Fact Sheet,” http://www.portofgraysharbor.com/downloads/crude-by-rail/CBR_Fact_Sheet.pdf; Angelo Bruscas, “Two companies want to export oil from the Harbor,” The Daily World, November 25, 2012, <http://thedailyworld.com/sections/news/local/two-companies-want-export-oil-harbor.html>; and “Hoquiam Moving Forward with Plans for Crude Oil,” March 15, 2013, <https://kxro.wordpress.com/2013/03/15/hoquiam-moving-forward-with-plans-for-crude-oil>. Construction cost figures from Washington State Joint Aquatic Resources Permit Application (JARPA) Form, Westway Terminal Expansion Project. Legal appeals from May 31, 2013 conversation with Kristen Boyles, attorney at EarthJustice.
18. Port of Grays Harbor, “CBR Fact Sheet,” http://www.portofgraysharbor.com/downloads/crude-by-rail/CBR_Fact_Sheet.pdf; and Imperium Renewables, “Facilities,” <http://www.imperiumrenewables.com/facilities.html>. Capacity figures are estimated by Sightline based on vessel and rail traffic figures provided by Imperium to the Washington Department of Ecology that compare Imperium’s proposal with Westway’s proposal, <http://www.cityofhoquiam.com/public-notice/imperium-proposal-mdns-and-ro-for-public.pdf>. Construction cost figures from Washington State Joint Aquatic Resources Permit Application (JARPA) Form, Imperium Bulk Liquid Terminal Facility.
19. Scott Learn, “Oil trains – pipelines on wheels – headed to Northwest terminals and refineries from North Dakota fracking,” Oregonian, May 13, 2013, http://www.oregonlive.com/environment/index.ssf/2013/05/oil_trains_-_pipelines_on_whe.html; Business Wire, “Global Partners Completes Acquisition of West Coast Crude Oil and Ethanol Facility,” February 19, 2013, <http://www.businesswire.com/news/home/20130219006157/en/Global-Partners-Completes-Acquisition-West-Coast-Crude>; and Scott Learn, “Ethanol plant in Clatskanie, built with \$36 million in Oregon loans and credits, now shipping crude oil,” Oregonian, May 13, 2013, http://www.oregonlive.com/environment/index.ssf/2013/05/former_ethanol_plant_in_clatsk.html. Capacity figures from conversations with Scott A. Smith, Oregon Department of Environmental Quality, Emergency Response Section, in May 2013. Smith said that the facility receives 8.4 million gallons per week arriving on 3 loaded 100-car unit trains with roughly 28,000 gallons per rail car. Sightline converts these figures to barrels per day.
20. Scott Learn, “Oil trains – pipelines on wheels – headed to Northwest terminals and refineries from North Dakota fracking,” Oregonian, May 13, 2013, http://www.oregonlive.com/environment/index.ssf/2013/05/oil_trains_-_pipelines_on_whe.html; and Tesoro Savage Petroleum Terminal LLC “Pre-Application Conference Request,” submitted to City of Vancouver Land Use Planning June 2013. Tesoro Savage, Vancouver Energy Distribution Terminal, “About the Permitting Process,” <http://tesorosavagevancouver.com/permitting-process>; and Energy Facility Siting and Evaluation Council, “Tesoro Savage Petroleum Terminal LLC,” <http://www.efsec.wa.gov/Tesoro-Savage.shtml>.
21. Sightline believes that the estimates provided in this report represent are the most accurate available, but note that some industry sources list figures that vary somewhat. See especially RBN Energy, “I’ve Been Working on the Railroad – Crude-by-Rail 2014,” <https://rbnenergy.com/subscriber/reports/previews/crude-by-rail-2014>.
22. Kristen Hayes, “Phillips 66 seeks permit for facility to receive crude by rail,” 4-Traders, April 3, 2013, <http://www.4-traders.com/PHILLIPS-66-10447684/news/Phillips-66-seeks-permit-for-facility-to-receive-crude-by-rail-16604359/>; and John Gillie, “Oil boom resonates in South Sound,” Tacoma News Tribune, November 25, 2012, <http://www.thenewstribune.com/2012/11/25/2379662/oil-boom-resonates-in-south-sound.html>.