

**Responses to Questions from Joint Committee on Ways and Means,
Subcommittee on Transportation and Economic Development
March 26, 2015**

1. Please provide a brief description of safety actions that the Railroads are taking.

Railroads place trackside warning devices along their rights-of-way to identify hot bearings, dragging equipment and wide loads. Class one railroads physically inspect their track four times a week, while Union Pacific covers from Springfield to Milwaukie seven days a week. Twice a week is the FRA requirement.

When equipment is placed in a train for transport all equipment is required to be inspected by the railroads, in addition to brake tests and ground level hazardous material inspections if hazmat is part of the shipment.

All railroads require safety meetings, job briefings, and stop work if situations change and perform additional job briefings.

2. What's being done to prevent late summer fires along Interstate 84 that are caused by sparks?

Union Pacific, the Class One railroad operating in the Gorge has instituted the following changes:

- No operation of "Roots blown locomotive", a locomotive series known to throw sparks out of the exhaust stacks.
- Cleaning the educator tubes (a tube used to collect particles in the exhaust) every 42 days instead of the required 92 days.

In general, railroads take many precautions to prevent fires caused by railroad operations.

- Air brakes tests are required whenever a car is placed in a train for transport.
- Locomotives and cars are now equipped with friction brake shoes rather than cast iron which reduces the production of sparks.
- They manage vegetation along their Right of Way.
- Passing trains must observe the train in the other direction for dragging equipment and brakes.
- They also use dynamic braking (Dynamic brakes use the traction motors as generators to reduce speed).

3. Describe the programs that are funded with cigarette tax money and provide a list by county of where the money is being used?

Oregon's Special Transportation Program (STF) Program includes revenues from cigarette taxes, DMV Identification Cards, the Transportation Operating Fund and General Fund and provides financial support to 42 designated counties, transit districts, and Indian tribal governments for special transportation services benefiting seniors and people with disabilities. Each recipient has a program that directs the funds toward appropriate uses to provide travel opportunities for seniors and persons with disabilities in their areas including the frail elderly, people with developmental disabilities, and people living in assisted living situations.

Special Transportation Funds are awarded using a population-based formula and are often used to match federal program dollars for vehicle purchases and services. Examples of funded services include access and operating support for volunteer and dial-a-ride services, expanding accessible fixed route transit, training for how to use transit, and providing information about options for those who can no longer drive.

How the program works:

- Each STF Agency must establish an advisory committee representing seniors and people with disabilities that advises on priorities for use of the funds.
- Each STF Agency must create a plan for coordinating providers and services for their areas.
- ODOT is responsible to make sure that the agencies establish their committees and follow an open and fair process.
- The local agencies are responsible for determining the priorities for selection of providers and services that meet transportation needs of seniors and people with disabilities in their areas.

Table A shows the amount of support provided to each of the 42 areas in the current biennium.

**Table A: Distributions from Special
Transportation Fund
(13-15 Biennium)**

STF Agency Name	County	2013-15 Biennium Total
Baker County	Baker	\$ 171,332
Benton County	Benton	\$ 503,627
TriMet	Clackamas, Multnomah and Washington	\$ 9,576,064
Sunset Empire Transit District	Clatsop	\$ 236,625
Columbia County	Columbia	\$ 303,868
Coos County	Coos	\$ 374,984
Crook County	Crook	\$ 171,332
Curry County	Curry	\$ 171,332
Deschutes County	Deschutes	\$ 920,265
Douglas County	Douglas	\$ 623,591
Gilliam County	Gilliam	\$ 171,332
Grant County Transit District	Grant	\$ 171,332
Harney County	Harney	\$ 171,332
Hood River County Transit District	Hood River	\$ 171,332
Rogue Valley Transit District	Jackson	\$ 1,175,270
Jefferson County	Jefferson	\$ 171,332
Josephine County	Josephine	\$ 482,038
Basin Transit Service	Klamath	\$ 395,711
Lake County	Lake	\$ 171,332
Lane Transit District	Lane	\$ 2,031,138
Lincoln County	Lincoln	\$ 285,643
Linn County	Linn	\$ 679,444
Malheur County	Malheur	\$ 205,427
Salem Area Mass Transit District	Marion and Polk	\$ 2,285,987
Morrow County	Morrow	\$ 171,332
Sherman County	Sherman	\$ 171,332
Tillamook County Transit District	Tillamook	\$ 172,457
Umatilla County	Umatilla	\$ 451,593
Union County	Union	\$ 175,294
Wallowa County	Wallowa	\$ 171,332
Wasco County	Wasco	\$ 173,044
Wheeler County	Wheeler	\$ 171,332
Yamhill County	Yamhill	\$ 579,316
Counties Subtotal		\$ 23,858,702
Burns Paiute Tribe		\$ 171,332
Confederated Tribes of Coos, et al		\$ 171,332
Confederated Tribes of Siletz		\$ 171,332
Confederated Tribes of Umatilla		\$ 171,332
Confederated Tribes of Warm Springs		\$ 171,332
Confederated Tribes of Grand Ronde		\$ 171,332
Coquille Indian Tribe		\$ 171,332
Cow Creek Tribe of Umpqua Indians		\$ 171,332
The Klamath Tribes		\$ 171,332
Tribes Subtotal		\$ 1,541,988
TOTAL		\$ 25,400,690

4. Description of Passenger Rail Subsidy

The ODOT Rail and Public Transit Division calculated the passenger rail subsidy in Oregon for the 2015-2017 biennium as \$120 per rider. We arrived at the \$120 subsidy amount by taking the total annual costs one year of the 2015-17 biennium and dividing by the most recent annual number of riders (117,160 riders in 2014). The subsidy is comprehensive and includes all costs to operate the program, including ODOT Passenger Rail staff wages and benefits, services and supplies including agreements for operations, capital equipment maintenance, fuel, host railroad costs, improvements, insurance, marketing, contingency, and other miscellaneous costs for running and growing passenger rail.

Amtrak and other states calculate and report the subsidy as a percentage of their ticket sales revenue; they use only Amtrak operating costs to calculate the subsidy. Using this methodology, ODOT's subsidy would be \$69 per rider based on payments to Amtrak.

ODOT and Amtrak have agreed to regularly scheduled fare increases while actively marketing passenger rail in Oregon. As ticket prices and ridership increase, revenue from ticket sales will increase thereby decreasing the subsidy amount.

5. What is the profile of passenger rail ridership?

From an Oregon Passenger Rail survey of riders conducted in 2013, we learned about the profile of those that use the Cascades service.

Key findings of the survey include:

- 49 percent of riders did not have a private vehicle available to make the trip.
- Riders reported their trip purpose as:
 - Visit friends or relatives 36%
 - Vacation/pleasure/recreation 23%
 - Personal or family matters 16%
 - Business 12%
 - Commute to or from school 6%
 - Commute to work 6%
 - Other 1%
- 79 percent of riders began their trip at their home or the home of a friend or family member.
- About 19 percent of survey respondents were first-time riders, while more than 30 percent used the service a few times per year; 21 percent rode one to three times per month, 13 percent rode once or twice per week and only 8 percent rode more than three days per week.

- About three-quarters of the surveyed riders' trips either began or ended in Portland or Eugene, and more than half of the trips were taken between Portland and Eugene.
- Nearly 60 percent of riders were dropped off at the station, while 20 percent used transit to reach the station.
- 47 percent of survey respondents were picked up at their destination station, 28 percent used transit and 10 percent took a cab to their destination.

A travel market analysis based on the on-board survey compared ridership characteristics with those of the corridor population as a whole. Key results include:

- The share of riders from households with annual incomes between \$25,000 and \$49,000 was much higher (35.1 percent vs. 19.6 percent).
- Households with income over \$100,000 were underrepresented (10.4 percent vs. 20.7 percent).
- Younger riders (ages 18 to 24) were overrepresented (30 percent vs. 13 percent), while riders over age 65 were underrepresented (7.9 percent vs. 15.6 percent).
- Riders with higher education (college degree) were overrepresented (45 percent vs. 32 percent).
- Riders without a vehicle in their household were overrepresented (19 percent vs. 8 percent).
- Students made up about 19 percent of riders, about double their share of the corridor population.

6. Governor's rail safety report

Report Follows



PRELIMINARY STATEWIDE RAIL SAFETY REVIEW

JULY 25, 2014



List of Abbreviations

AOC-Agency Operation Center	NIMS – National Incident Management System
ATSDR – Agency for Toxic Substance and Disease Register	NIOSH – National Institute for Occupational Safety & Health
AAR – American Association of Railroads	NTSB – National Transportation Safety Board
AFFF – Aqueous Film-Forming Foam	NDPC – North Dakota Petroleum Council
AFPM – American Fuel & Petrochemical Manufacturers	OAR – Oregon Administrative Rules
API – American Petroleum Institute	ODF – Oregon Department of Forestry
ATSDR – Agency for Toxic Substance and Disease Registries	ODOE – Oregon Department of Energy
BNSF – Burlington Northern Santa Fe Railway Company	ODOT – Oregon Department of Transportation
CN – Canadian National Railway Company	OEM – Oregon Office of Emergency Management
CR2K – Community Right to Know Program	OHA – Oregon Health Authority
CRS – Congressional Research Service	OMB – White House Office of Management and Budget
DEQ – Oregon Department of Environmental Quality	ORS – Oregon Revised Statutes
DHS – United States Department of Homeland Security	OSFM – Office of the Oregon State Fire Marshal
DSL – Oregon Department of State Lands	PHMSA – Pipeline & Hazardous Materials Safety Administration
EIA – Energy Information Administration	PLF – Petroleum Load Fee
EOP -- Emergency Operations Plans	PTC – Positive Train Control
EPA – Environmental Protection Agency	P&W – Portland & Western Railroad
EPD – Emergency Planning District	RRT – Regional Response Team
FCC – Federal Communications Commission	RSPA – Research and Special Programs Administration
FRA – Federal Railroad Administration	SERC – State Emergency Response Commission
G&W – Genessee & Wyoming Inc.	STB – Surface Transportation Board
HMERT—Hazardous Materials Emergency Response Teams	THUD – Transportation, Housing & Urban Development Appropriations bill
HSPF – Hazardous Substance Possession Fee	UP – Union Pacific Railroad
ICS – Incident Command System	USCG – United States Coast Guard
LEPC – Local Emergency Planning Committee	USDOT – United States Department of Transportation
MAP-21 – Moving Ahead for Progress in the 21 st Century Act	WWCD – Wetlands and Waterways Conservation Division
MSDS – Material Safety Data Sheet	
NCP – National Contingency Plan	

PURPOSE

This document is intended to give policymakers in Oregon a background on issues related to the transport of crude oil by rail, along with a series of recommendations and findings. It includes current information on the regulatory status of the movement of this hazardous material and outlines ongoing issues at the federal, state, and local levels. It is not intended to be an operational plan, but is instead a resource for the consideration of updated policies on the safe transport of hazardous materials, like crude oil, and response to railroad derailments. It is also intended to inform existing policies and regulations for those involved in rail safety.

Section Overview

Section One of this document is an **overview of key issues** that are currently being discussed related to the transport of crude oil, including tank car standards, derailment prevention, the quantification of Bakken area crude as a hazardous material, notification for emergency responders on the transport of hazardous materials by rail, Positive Train Control, issues surrounding moving crude oil either by pipeline or by rail, training for emergency responders, federal requirements for railroad response plans, and railroad crew size.

Section Two describes the **roles of federal and state agencies** primarily involved in the transport of hazardous materials by rail. In the case of some state agencies, the list includes agencies that may only be involved in the event of an incident.

Section Three includes a series of **findings and recommendations** related to the transport of crude oil in Oregon.

Section Four identifies **actions and activities that have taken place at the federal and state levels** – including a field training day for Oregon policymakers and a three-day training for Oregon’s emergency responders on hazardous materials (including crude oil) response.

Section Five includes **information from the railroads** about the work to ensure the safe movement of hazardous materials.

The document also includes appendices of reference materials and endnotes.

EXECUTIVE OVERVIEW OF INITIAL FINDINGS

In February 2014, Governor Kitzhaber called for a statewide review of rail safety in Oregon. The Governor's action was prompted by an increase in the transport of crude oil along major rail lines in the state, including the Columbia River Gorge.

Changes in technology have led to the extraction of crude oil from previously inaccessible areas, resulting in a boom in domestic land-based production. By 2012, unprecedented quantities of crude oil were moving along rail lines. The characteristics of this crude oil and the reliance on rail –

which has not traditionally been used to move large volumes of crude oil – has raised a series of questions about whether or not it is safe to transport in this manner.

Industry trends suggest the amount of crude oil moved by rail will increase over the next few years. In response, the Governor charged state agencies that have a role in rail safety and emergency response to review the status of oil trains in Oregon, the resources and training currently available to ensure the safe transport of crude oil, and whether or not state policies and procedures need to be updated. This report is the result of that review. In addition, the Governor has taken other steps to promote rail safety at the federal level.

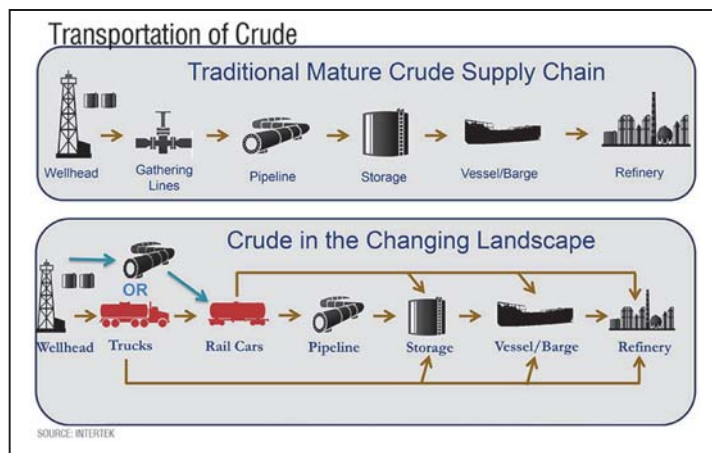
In Oregon, three rail operators are responsible for moving crude oil by rail:

1. Union Pacific (UP) – operating along the Columbia River on the Oregon side, down the Willamette Valley, and across the Willamette Pass via Oakridge and Chemult to California;
2. Burlington Northern Santa Fe Railway Company (BNSF) – operating through central Oregon on the “Oregon Trunk,” along the Columbia River on the Washington state side and connecting to Portland; and,
3. Portland & Western (P&W) – a subsidiary of Genesee & Wyoming (G&W), operating in Portland and northwest Oregon along the “A” line, west of Portland along the northwest corner of the state.

For producers, rail has become a preferred way to transport North American crude oil to refineries. Unlike California and Washington, Oregon has no refineries, but it does have two transload facilities that receive crude oil – one at Port Westward and one in northwest Portland. This means much of the crude oil traveling by rail through Oregon is destined for refineries in other states.

Given the increase in shipments and several major spills and explosions, including the disaster in Lac Mégantic, Quebec, the shipment of crude oil by rail has raised serious concerns in Oregon:

- Is it safe to transport crude oil by rail?
- Are local emergency responders prepared?
- How would an accident impact a community or an environmentally-sensitive area?
- Are the railroads doing all they can to prepare for and prevent an accident?
- Are federal and state regulators doing all they can to oversee the safe transport of crude oil and other hazardous materials?



EXECUTIVE OVERVIEW OF INITIAL FINDINGS

Initial Findings and Recommendations

In response to Governor Kitzhaber's call for a statewide review, several areas have been identified that require improvement, action, or response:

- **Continued action is needed at the federal level.** Federal regulators provide the primary oversight role in the safe movement of hazardous materials. While shipment of crude oil by rail at the current scale is relatively new, longstanding proposals at the federal level to improve rail safety have been identified yet have been slow to be implemented or addressed. However, the U.S. Department of Transportation took an important step on July 23, 2014, announcing rulemaking intended to shore up the nation's rail safety. Oregon remains interested in timely and strong rail safety standards and will assist federal regulators by offering comments on this important topic. The Governor intends to continue his advocacy for updated standards for tank cars that haul hazardous materials, implementation of Positive Train Control, and safety regulations to ensure the transport of crude oil by rail is on par with the transport of crude oil by barge or oil tanker.
- **Notification to emergency responders about the movement of hazardous materials through a community by rail is inadequate.**
 - Railroads have said information on hazardous material shipment is available to emergency responders – but only upon request. Many emergency responders are unaware of individual railroad procedures to access this information. The mechanism to receive *timely* notification about the movement of hazardous materials from railroads for use by emergency responders, either for training purposes or to respond to a rail incident, needs improvement. Additionally, the mechanism for the receipt and distribution of annual reports regarding movement of these materials from railroads to state agencies needs improvement.
 - State agencies should act as a hub for the collection of this information and be an advocate on behalf of local communities, but they have been lax in the collection and dissemination of this type of information. State agencies must do a better job coordinating with the railroads and local emergency responders to ensure this information is accessible.
- **State agencies need to ensure adequate staff are in place to conduct rail and hazardous materials inspections.** In previous years, positions related to rail and hazardous materials inspection went unfilled as a cost-savings measure or for other purposes. While this is not the practice of current administrators, it has happened in the past.
- **Oregon needs federal regulators to provide guidance on the number of rail safety inspectors needed to adequately perform inspections on all railroads throughout the state.** Governor Kitzhaber recently wrote U.S. Secretary of Transportation Anthony Foxx requesting this guidance from the Federal Railroad Administration (FRA) in order to ensure Oregon has the proper number of staff performing this critical work. ([Letter from Governor Kitzhaber to Secretary Foxx - Rail Safety - 05.02.14](#)) Secretary Foxx recently responded saying the FRA does not provide this type of guidance but instead works with states to determine inspection priorities, among other things. ([Response Letter from Secretary Foxx to Governor Kitzhaber - Rail Safety & Crude Oil Transport - 07.09.14](#)) The state still intends to consult the FRA on the adequate staff levels for rail safety inspection. ODOT's Rail Division will also

EXECUTIVE OVERVIEW OF INITIAL FINDINGS

identify the appropriate number of inspectors and adequate compensation level needed to retain these critical safety employees.

- **State agencies need to proactively identify and propose changes to outdated statutes, administrative rules, and procedures related to rail safety.** Agencies involved in the oversight of the safe movement of hazardous materials must at all times have their focus on the protection of local communities and environmentally sensitive areas in our state. State policymakers can assist in this endeavor by ensuring appropriate resources are available to do this work.
- **State agencies need to better collaborate on ideas and best practices that can be implemented to enhance rail safety.** Just as with the federal government, state regulations on the movement of crude oil are better defined for marine movement compared to land-based movement.
- **Railroads need to be responsible for all on-site and off-site consequences from an incident involving hazardous material on their lines.** While this is already required under existing federal regulations, railroads must demonstrate they are fully capable to meet this responsibility. Part of that demonstration includes providing timely emergency notification to local officials along their line and better information on resources in place to mitigate, contain, and clean up hazardous material releases in the event of an accident.
- **State agencies must regularly review emergency plans prepared by railroads handling hazardous materials, including crude oil.** The review should be comprehensive to ensure plans comply with state and federal regulations, as well as adequately protecting the public and the environment. State agencies must conduct exercises with railroads to validate emergency plans and build strong public-private relationships.
- **Railroads need to provide the state of Oregon and emergency responders detailed information on the cache of equipment they have available to respond to a rail incident.** Without this information, it is nearly impossible for state and local emergency responders to assess if adequate equipment is available in the event of a hazardous materials incident on a rail line.
 - Federal regulators should help by updating and clarifying what information from a railroad's emergency response plan must be made available to states and emergency responders. Federal regulators should consider lowering the threshold for what constitutes a railroad's spill response "Comprehensive Plan," which is subject to FRA review and approval, as opposed to a "Basic Plan," which does not require similar review and oversight.
- **Railroads need to set up an improved and well-tested mechanism for emergency responders to access train manifests (aka, *consist*) on train cargo in the event of a derailment.** The Association of American Railroads (AAR) says it is working with partner railroads to create an online site where emergency responders can access this information in the event of an accident. It also states it has a 1-800 number that emergency responders can use to access consist information. However, investigations by the National Transportation Safety Board (NTSB) have illustrated in past accidents that consist information has been unreliable and even difficult to access when an accident occurred. Shoring up both the process to get this information and ensuring the information is reliable is paramount in the event of an emergency response.

Section #1

Overview of Key

Issues

OVERVIEW – RAIL SAFETY IN RESPONSE TO INCREASE IN OIL TRAINS

A National Perspective

“Since 2005, both ethanol and crude oil transport in the U.S. have increased by over 440 percent. We didn't have pipelines [in the new production areas] but we do have rail lines. And so those rail lines are essentially now functioning like a moving pipeline. A hundred cars in a train, millions of gallons of crude or ethanol in those trains, and they are moving across the country.”ⁱ

--Deborah Hersman, former National Transportation Safety Board Chairman

In December 2013, the Association of American Railroads (AAR) released a report detailing an exponential increase in shipment of oil by train in the United States over the last few yearsⁱⁱ:

- In 2006, approximately 3,000 oil shipments were sent by train.
- In 2013, approximately 400,000 oil shipments were sent by train.
- By 2014, it is projected that 650,000 carloads of crude will be shipped by train.ⁱⁱⁱ

AAR's report was followed by a safety alert from the U.S. Department of Transportation's Pipeline & Hazardous Materials Safety Administration (PHMSA) on January 2, 2014, saying the “type of crude oil being transported from the Bakken region may be more flammable than traditional heavy crude oil.” The increase in shipments of crude oil by rail and the potential volatility of Bakken area crude caught both industry regulators and policymakers off guard. But the data detailed in this and other reports, combined with the specter of the Lac Mégantic, Quebec, disaster and recent oil train derailments in North Dakota, Alabama, and Virginia have raised concern about the safety of oil trains running across the United States and in Oregon.

Rail operators that haul crude oil in Oregon are “common carriers.” By federal law, common carriers are required to offer their services to the general public, provide the necessary facilities to transport the volume of goods expected, and exercise reasonable care in transporting those goods safely. As a common carrier, they are “obligated to transport hazardous materials and cannot refuse to provide this service merely because to do so would be inconvenient or unprofitable.”^{iv} Common carriers, not those who hire them to move their product, are generally liable for the loss or damage of the goods they ship. They rarely own the rail cars they transport. However, they are required to ensure that the condition of these cars is safe for transport. State and federal regulators inspect the cars hauled by rail operators to check if they are safe for transport.

Longstanding warnings from the National Transportation Safety Board (NTSB) about the safety of the DOT-111 tank cars^v, often used to haul crude oil and ethanol, led to calls for immediate action by the U.S. Department of Transportation (USDOT) to speed up the implementation of new regulations designed to enhance the safety of the nation's rail network. During her farewell address to the National Press Club, outgoing NTSB Chairman Deborah Hersman said that “U.S. communities are not prepared to respond adequately to worst-case accidents involving trains carrying crude oil and ethanol.” She also said federal regulators are “behind the curve in addressing the transport of hazardous liquids by rail” given the dramatic increase in movement of oil and other flammable material by train, and that “the petroleum industry and emergency responders don't have provisions in place to address a worst-case scenario event involving a train carrying crude oil or ethanol.”^{vi}

Until the July 23, 2014, release by the USDOT of a draft rule containing a comprehensive set of rail safety proposals, most measures taken by federal regulators have been to request *voluntary* measures on the part of rail operators, and to commence a process to update tank car safety regulations. While the

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process had been slow, frustrating many policymakers including Governor Kitzhaber and members of Congress, the announcement of the draft rule is a good step.

How Did We Get Here

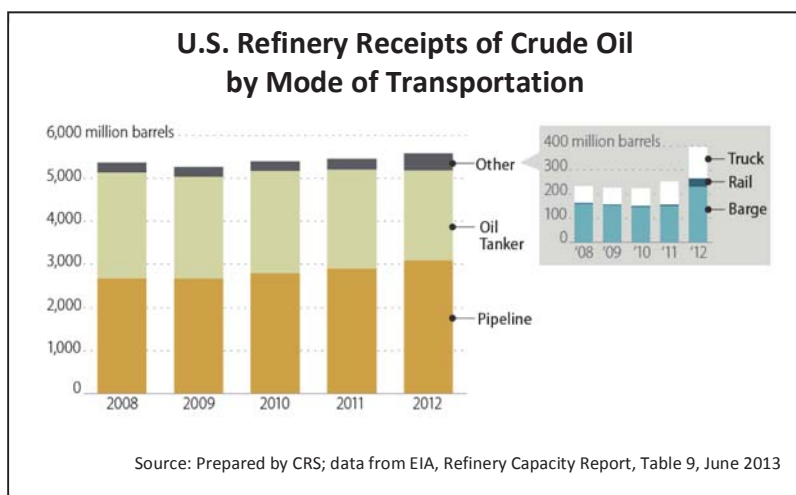
In recent years, the United States and Canada have experienced a significant boom in energy production. Most of the growth in production has come from the Bakken fields in North Dakota and Montana, and as the Eagle Ford and Permian Basins in Texas, as well as Canadian shale oil production from the oil sands.^{vii} The recent ability to extract crude oil out of these regions came about because of breakthroughs in extraction technologies of hydraulic fracturing and horizontal drilling, along with energy prices that made this kind of extraction competitive. This energy production increase is so significant that a study by the Energy Information Administration (EIA), showed that U.S. energy production is at a 42-year high with oil and natural gas production reshaping U.S. energy markets.^{viii}

How Crude Oil Is Transported To U.S. Refineries

The vast majority of crude oil destined for U.S. markets is transported by pipelines or by oceangoing tankers from production sources originating in Africa, the Middle East, and Latin America. A report by the Congressional Research Service (CRS) found that 96 percent of all crude oil transported in the United States between 2005 and 2010 was transported by pipeline and tanker ships to refineries.^{ix} These two modes have traditionally been preferred because they are “low cost” and “high capacity.” Much of this crude oil was then delivered to existing refinery facilities in the United States. The majority of the nation’s refinery capacity is located in the Gulf Coast, but a significant number of refineries are also located along the West Coast in California and Washington.

Increased crude oil production in North America has created transport-related challenges from new production sources to existing refineries located across the country. “Production has been outstripping pipeline capacity, and domestic barge networks do not always serve key production regions located far from navigable waterways.”^x Consequently, producers in these growing production markets have begun to use other modes to move this commodity to the existing U.S. refinery system.

Even so, shipment by other modes remains a relatively small percentage of the total crude oil shipments in the United States. CRS found that pipelines and oil tankers still moved 93 percent of all crude oil in 2012. But this shift has been dramatic for other modes. Even though barges don’t serve all production regions, crude oil shipped by barge rose 53 percent in 2012, and shipments by truck rose 38 percent during the same time period.^{xi} For rail, it has been even



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more significant – the growth in volume of crude oil carried by rail between 2011 and 2012 increased 423 percent.

Rail operators and regulators say that rail is one of the safest ways to transport hazardous materials. Even so, a recent USDOT safety order (May 7, 2014) noted that “[w]hile the overall number of accidents and derailments has actually decreased over the past several years, the number and type of railroad accidents involving Bakken crude oil that have occurred during the last year has increased, and the quantity of petroleum crude oil released as result of those accidents is higher than past precedents.”

So while the overall percentage of crude oil transported by rail may be still be a small, there are more significant issues to consider: the nature of the commodity, how it is shipped under existing regulatory rules and regulations, and how and where this mode operates. These issues appropriately raise questions and concerns for policymakers, emergency responders, and local communities across the country. Rail lines today pass through countless communities, both large and small, and through places that are environmentally sensitive. Protecting both our special places and people is of paramount concern.

Issue By Issue

Tank Car Safety Standards



Multiple elements are involved in the safe transport of hazardous materials by rail. One of the most discussed issues is the use of DOT-111 tank cars to haul certain hazardous materials. A DOT-111 tank car is an unpressurized car commonly used to transport ethanol and, more recently, Bakken area crude oil. Approximately 69 percent of the tank cars in the United States are DOT-111 cars.^{xii} These tank cars have a thickness of 7/16 of an inch and a maximum carrying capacity of 34,500 gallons.

DOT-111 tank cars have been involved in the most widely reported rail accidents involving Bakken crude oil in North America this last year. While

many have just learned about these tank rail cars this year, safety advocates have been concerned about them for decades. In 1991, the NTSB first identified the DOT-111 tank car on its “Most Wanted List” for safety saying it is “more susceptible to damage” than other rail cars and therefore poses “a substantial danger to life, property, and the environment.”^{xiii} Even then, they noted concern about this tank car had been “evident for many years” after observing how these tank cars performed in numerous rail accidents.

Railroads have also raised concern about these cars. For the most part, railroads don’t own the rail cars they ship.¹ Instead, the cars are owned or leased by the shippers.^{xiv} But the railroads are subject to federal

¹ A May 7, 2014, press release from Sen. Maria Cantwell’s (D-WA) offices states, “[r]ailroads own less than one

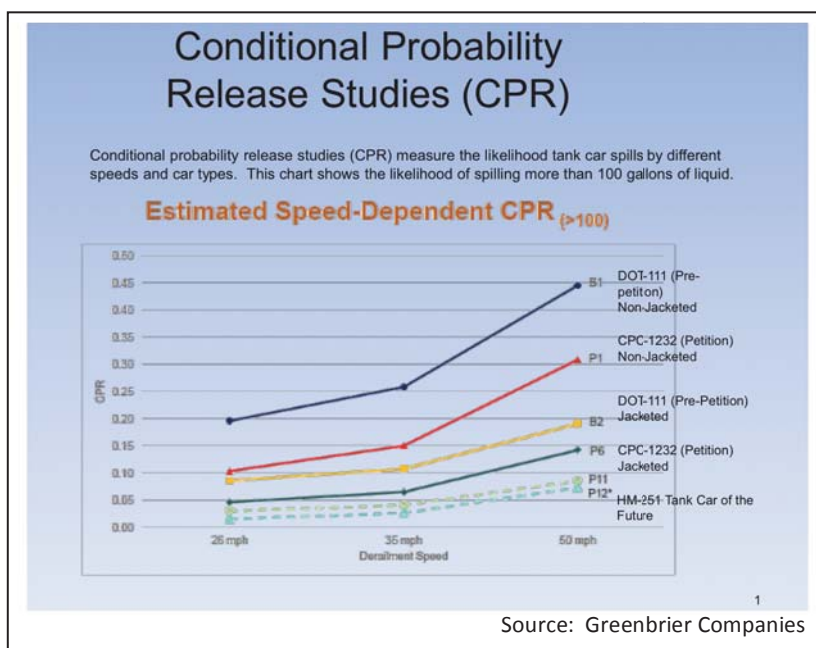
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regulations issued by PHMSA for safe transport of hazardous materials. The AAR says it “has been aggressively searching for ways to improve tank car safety.”^{xv} In March 2011, the AAR “petitioned PHMSA to adopt more stringent requirements for new tank cars used to transport certain types of hazardous materials, including crude oil.” Noting that approval for a new standard was “not imminent,” the AAR Tank Car Committee² passed an order on October 1, 2011, to use the CPC-1232 cars to exceed existing federal rail requirements for the shipment of crude oil and ethanol. On November 2013, the rail industry called on PHMSA to adopt standards even more stringent than CPC-1232 for new tank cars used to transport crude oil and ethanol,” and aggressively retrofit or phase out of tank cars (including CPC-1232 cars and the older DOT-111 cars) used to transport crude oil or ethanol.”³

The slow pace of federal regulation and the lack of a uniform standard has been a frustration for elected officials, rail car owners, railroads, manufacturers, and suppliers. Oregon Congressman Peter DeFazio and others have noted that the lack of a modern, uniform regulatory standard for tank cars has created uncertainty in the marketplace.^{xvi} Implementing new federal rules should help. Purchasing new tank cars is costly, and retrofitting is expensive as well. The Railway Supply Institute reported “the [conservative] cost of retrofitting existing cars with head shield and jackets [is] more than \$1 billion over the life of a retrofit program.”^{xvii}

Adequacy of the CPC-1232s for use in the transport of crude oil has not gone without scrutiny. During an April 22-23 2014, two-day hearing held by the NTSB, representatives from the American Petroleum Institute (API) testified that CPC-1232 was adequate for the transport of crude oil and other hazardous materials.^{xviii} However, an April 30, 2014 derailment of a CSX train transporting crude oil, hauled in the higher-standard CPC-1232 tank cars, raised questions regarding the adequacy of these cars. Initial findings by the NTSB did not assign fault with the crew or mechanics of the equipment, nor was the train speeding. The investigation into the cause of that accident is ongoing.



² According to the AAR, this committee is “comprised of AAR, rail car owners, manufactures, and rail hazmat customers, with active participation for the U.S. DOT, Transport Canada and the [NTSB].”

³ On March 2, 2012, the NTSB did note the AAR requirements from March 2011, “[did] not provide a retrofit solution for the existing fleet of about 40,000 tank cars that are dedicated to transporting denatured fuel ethanol.”

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Representatives from Greenbrier, an Oregon-based rail car manufacturing company, say that as federal regulators look at updated regulations for tank car standards, they should also consider what Greenbrier calls the *Tank Car of the Future* – a “new generation” tank car for the transport of “hazardous freight, including flammable crude oil and ethanol, that can better withstand the additional demands associated with operating unit trains.”^{xix} In a February 4, 2014 press release, Greenbrier Chairman and CEO William Furman said his company, “is addressing the tank car safety issue on two fronts - by supporting a '*Tank Car of the Future*' and through offering retrofit alternatives for the legacy fleet, including our most recently built CPC-1232 tank cars ... This allows the industry to take immediate steps to improve public safety. It also preserves the massive investment in tank cars now in service, by extending the time these cars could be used in hazardous material transportation as they ultimately transition over time to less hazardous service.”^{xx}

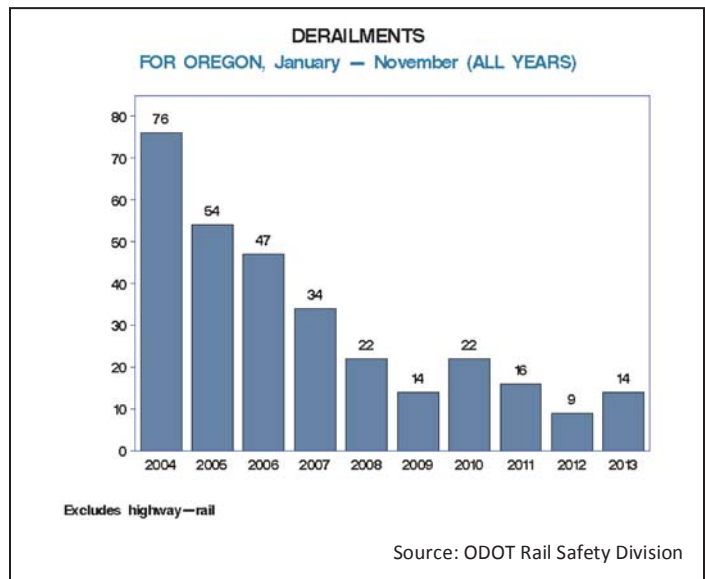
While no one tank car design will be infallible, Greenbrier argues a more stringent tank car design, combined with lower operating speeds, will dramatically minimize the probability of a spill during a derailment. Additionally, to achieve a high level of safety, the NTSB adds that “[i]mprovements in tank car safety would most effectively be targeted to those hazardous materials commodities that are transported by unit train, such as denatured fuel ethanol and crude oils, and which pose the greatest risks when released.”^{xxi}

Preventing Derailments

Research from the University of Illinois at Urbana-Champaign has found derailments are the most common type of train accident in the United States.^{xxii} Derailments can be caused by a host of factors: poor and improper maintenance of tracks, excessive speed of trains, understaffed or overworked track maintenance departments, mechanical failures of train engines or rail cars, and failed signal equipment or switch alignment.⁴

Over the last decade, derailments in Oregon and across the country have fallen dramatically. The AAR credits this

improvement to investments made by railroads in their **track infrastructure**. In testimony to Congress, AAR noted that from 2008 to 2012, “Class I railroads spent nearly \$26 billion in capital expenditures on new crossties (77 million), new rail (2.9 million tons), and new ballast (nearly 61 million cubic yards).



⁴ According to CRS, nationwide, broken rails and track welds were the leading cause of derailments, causing 670 derailments between 2001 and 2010. Track geometry defects were the second leading cause, leading to 300 derailments during the same time period.⁴ Geometry defects are “caused by inherent flaws (internal defects) in the rail and/or by fatigue on the surface of the rail.”⁴

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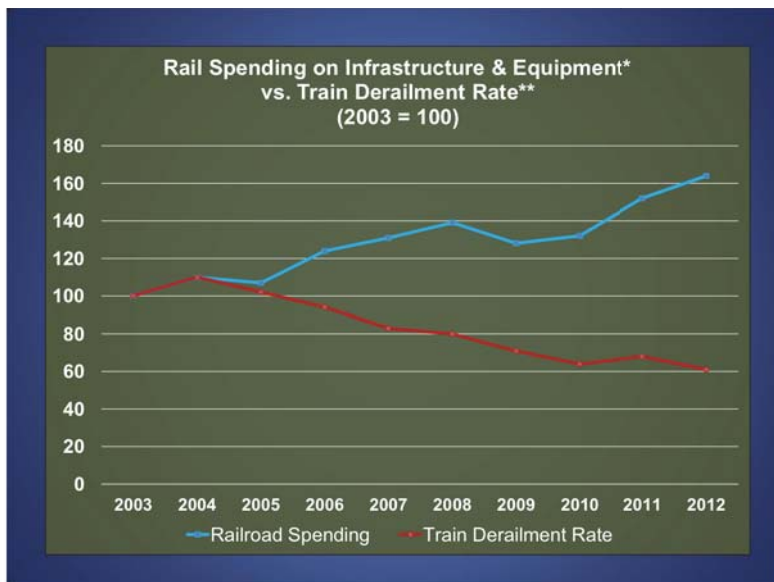
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Over the same period, they spent billions of additional capital expenditure dollars on signal and communications systems, bridges and tunnels, and machinery.”^{xxiii} Oregon has also made similar investments in track infrastructure through its *ConnectOregon* program.

Track inspection also plays an important role in rail safety. CRS noted that in the Rail Safety Improvement Act of 2008 (P.L. 110-432, Section 403(a)), “Congress requested that the FRA study and consider revising the frequency and methods of track inspection. FRA conducted the study and on January 24, 2014, issued a final rule on improving rail integrity. The new rule requires railroads to achieve a specified track failure rate rather than scheduling inspections based on the calendar or traffic volume. It also allows railroads to maximize use of rail inspection vehicle time by prioritizing remedial action when track defects are detected.”^{xxiv}

CRS says the railroad industry takes extra safety precautions for “key trains” – trains carrying certain *amounts* and *kinds* of hazardous materials, including crude oil. In response to the Lac Mégantic derailment, CRS reported the industry-modified guidelines for key trains to include the following:

- restricting train speeds to less than 50 mph;
- increasing the frequency of track maintenance;
- installing wayside defective equipment detectors (such as ‘hot box’ detectors) to expose wheels with faulty bearings; and,
- only using track in good enough condition to support speeds of 25 mph or higher.”^{xxv}



Source: American Railroad Association

The FRA also released an Emergency Order on August 2, 2013, to address issues impacting derailments, including requiring no train “be left unattended on a mainline track or side track outside a yard or terminal, unless specifically authorized,” and setting standards to ensure “the correct number of hand brakes are applied” to prevent trains from moving unintentionally.”^{xxvi}

Quantifying Risk from Bakken Area Crude

On January 2, 2014, the Pipelines & Hazardous Materials Safety

Administration (PHMSA) issued a safety alert stating crude from the Bakken region *may* be more flammable than traditional heavy crude.”^{xxvii} This safety alert was part of an investigation started in 2013 by PHMSA and the FRA “to investigate how shippers and carriers are classifying crude oil and what actions they are taking to determine the characteristics of the material.”^{xxviii} The Bakken formation oil is thought by some to contain high levels of combustible gases, such as methane and propane, which make it more flammable than other types of crude.”^{xxix}

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PHMSA followed up its safety alert with an Emergency Order on February 25, 2014, “requiring all shippers to test product from the Bakken region to ensure the proper classification of crude oil before it is transported by rail, while also prohibiting the transport of crude oil in the lowest packing group.”^{xxx} Packing groups describe the hazard class based on the material’s flash point and initial boiling point.⁵ However as this Emergency Order was released, a public back-and-forth between federal regulators and industry association representatives began regarding the availability of oil samples for testing by regulators.⁶

In recent months, both USDOT Secretary Anthony Foxx and PHMSA officials told Congress^{xxx} the oil industry has been “dragging its feet in cooperating with regulators.”^{xxxii} In May 2014, federal regulators said they had only received samples from three oil producers⁷ even though at least “40 companies are pumping oil [in the Bakken region], and [that] a dozen more [are operating] rail-loading facilities.”^{xxxiii} Federal regulators say “many shippers have gotten mixed messages from trade groups about how much they should aid regulators.”^{xxxiv}

On the other hand, the American Petroleum Institute (API) stated these “reports are false,” and that it has been “cooperating and sharing proprietary data with the Department of Transportation on the characteristics of crude oil.”^{xxxv} The chief counsel of the American Fuel & Petrochemical Manufacturers (AFPM) said “he told refiners ‘they have a choice to provide DOT the information directly or to work through the association that is in the process of providing a consolidated response.’”^{xxxvi}

Recently, industry associations have released two different reports on the characteristics of Bakken crude:

1. A May 20, 2014, report by the North Dakota Petroleum Council (NDPC) said that after testing “150 crude samples from oil wells and railroad loading terminals,” Bakken crude oil is “comparable in volatility to gas-rich oils from other shale formations in other regions.”^{xxxvii} Therefore, they find it “does not pose a greater risk to transport by rail than other transportation fuels.”^{xxxviii} API later said NDPC’s findings are “consistent with test results from nearly 250 samples of crude oil that [their members had] already shared with the U.S. Department of Transportation.”^{xxxix}
2. An earlier study released by the AFPM on May 14, 2014, reported that after looking at 1,400 samples, Bakken crude oil is “well within the limits for what is acceptable for transportation as a flammable liquid, and when compared with other light crude oils” is “within the norm in the case of light hydrocarbon content, including dissolved flammable gases.”^{xl}

⁵ Packing Groups I and II are higher points than Packing Group III.

⁶ News reports say the current testing regime for crude oil “was not designed for unrefined crude and, as a result, can play down the dangers of shipping some light crude oils, according to industry and transportation experts.” It notes crude oil containing high concentrations of “light ends,” which are most at risk because “they can ignite and magnify the size of an explosion.” Testing for flash points and boiling points can be difficult, and another test, the Reid Vapour Pressure test, can also create inaccuracies because it also allows “light ends to easily vaporize” when samples are collected. Instead, the Canadian Transport Ministry “recommended using a so-called True Vapor Pressure test, which it said accounts more fully for the dissolved gases in crude.” API presentation materials to PHMSA on May 19, 2014, show they concur that the Reid Vapor Pressure test is “not a good indicator of flammability.”

⁷ Federal regulators reported that only Exxon Mobil Corp., Continental Resources Inc., and Savage Services Corp.

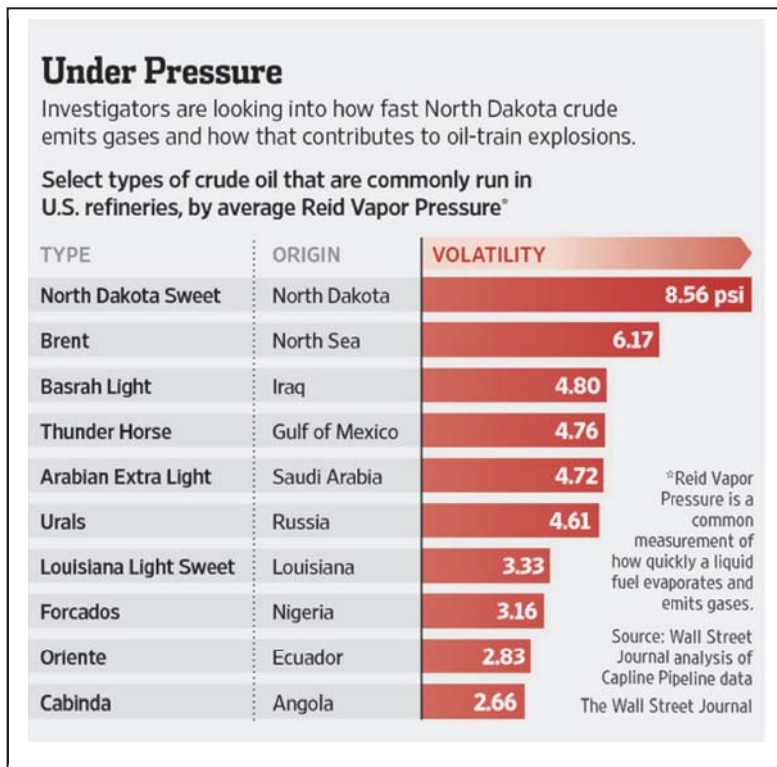
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On July 23, 2014, PHMSA and FRA released a report stating they determined “the current classification applied to Bakken crude is accurate under the current classification system,” and commented that Bakken crude, “has a higher gas content, higher vapor pressure, lower flash point and boiling point and thus a higher degree of volatility than most other crudes in the U.S., which correlates to increased ignitability and flammability.”^{xli} Jack Gerard, president of API, pushed back saying the comment about Bakken crude having a higher degree of volatility as “speculation” and not supported by the best science or data.^{xlii}

Petroleum crude oil currently has a DOT 3 rating, indicating it is a flammable liquid. USDOT has petitioned the United Nations for ideas to address the unusual characteristics of Bakken crude oil that potentially could lead to a new classification. This would “harmonize” domestic classification with standards for the marine transport of crude oil.

CRS has also emphasized that “equally hazardous and flammable liquids from other sources are routinely transported by rail, tanker truck, barge, and pipeline, though not without accident.”^{xliii} Congress may then have to grapple with whether the characteristics of Bakken crude oil makes it “particularly hazardous to ship by rail.”^{xliiv}



Notification of Emergency Responder/Manifest Information

Emergency responders rely on accurate and timely information for training, equipment inventory, and to prepare for a multiplicity of potential scenarios. Consequently, access to information about what, if any, hazardous materials are hauled through a community by train is crucial. Unfortunately, emergency responders’ ability to get information about the content of hazardous materials carried on a train prior to or in the event of an accident has not necessarily been transparent.

Since 9/11, the federal government has elevated concerns about the safety of the nation’s freight rail system in general,⁸ and the railroads have not been inclined to release real-time train manifest (aka,

⁸ GAO, 09-243, Federal rail Security – The 9/11 Commission Act was signed into law in 2007, “requires DHS to establish several programs aimed at improving freight rail security. The law requires that DHS, among other things, identify high-risk railroads and issue regulations requiring high-risk railroads to conduct vulnerability assessments and develop security plans, establish a

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consists) for fear of protest or terrorist attack.^{xlv} In 2009, rules developed with the Department of Homeland Security (DHS) require that “railroads keep secret all their routing decisions and analysis and share them only with ‘appropriate persons,’” and they require “railroads to conduct detailed yearly analysis to determine the safest routes for the most hazardous shipments.” Crude oil is not included on this list.^{xlvi}

Railroads also provide, upon request, their prior year’s commodity flow to emergency responders, but the information they disclose is general.^{xlvii} Past rail incidences have also shown that accessing train consists isn’t always easy for emergency responders involved at a scene.

For example, a report by the NTSB about a 2005 train collision in Anding, Mississippi, found the ability to get timely access to a train consist was a safety factor in that event. In this incident, two CN freight trains had collided head on, producing flames that engulfed the area around the locomotives and the derailed cars. As the hours went by, the on-scene incident commander couldn’t get accurate consist from a railroad dispatcher, an on-scene railroad official, or later a clerk who arrived hours later without an accurate consist for one of the two trains.^{xlviii} The lack of accurate information delayed emergency responders’ ability to assess risks, search for crew members, appropriately identify residents needing to be evacuated, and otherwise perform their roles during an emergency situation.

Notification of a significant shift in hazardous materials traveling through a community by rail is also important to emergency responders. Just as railroads have changes in the commodities they haul over time, the compliment of emergency responders in a community also changes as people move, retire, or make different career choices. Members of Congress have raised this issue with rail association officials, saying better notification following commodity shifts is needed for emergency responders to be prepared.

The AAR says it is working with railroads to improve emergency responders’ access to information about train consists. The AAR has told Congress it has a 1-800 number for emergency responders to call and obtain information about train consists when they are responding to a scene. AAR has also told Congress they are also working on a website that can be accessed by emergency responders to learn what, if any, hazardous materials are on a train in the case of an accident.^{xlix}

On May 7, 2014, USDOT issued an emergency order requiring railroads hauling trains with more than 1,000,000 gallons of Bakken crude oil – approximately 35 tank cars – to disclose this information to a State Emergency Response Commission (SERC).⁹ As of June, railroads must also disclose the expected movement of such trains.¹ This order came out a week after Governor Kitzhaber wrote USDOT Secretary Foxx noting Oregon must rely on its federal partners to mandate safety standards for the transport of hazardous materials on rail lines, and that fire chiefs need timely information when there is a change in hazardous materials and other commodities hauled by rail operators through their communities ([Letter from Governor Kitzhaber to Secretary Foxx - Rail Safety - 05.02.14](#)). Secretary Foxx responded directly to the Governor on May 12, 2014 ([Response Letter from Secretary Foxx to Governor Kitzhaber - Safe Rail Transport of Crude Oil - 05.12.14](#)), outlining the agency’s work to date with the railroads, and discussing in detail the emergency order and safety advisory.

program for conducting security exercises for railroad carriers, and issue regulations for a security training program for frontline rail employees.”

⁹ In Oregon’s case, this is the Oregon State Fire Marshal’s Office.

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On May 9, 2014, Senators Ron Wyden and Jeff Merkley called upon the USDOT to expand the May 7th Emergency Order to apply to *all* oil shipments by train, not just oil produced in the Bakken region.ⁱⁱ

The July 23, 2014, proposed rule by the USDOT would put the May 7th emergency order into law. Governor Kitzhaber questions why only Bakken oil shipped by rail is included in the proposed rule and not *all* oil shipped by rail. This is significant since the USDOT just determined that Bakken crude is accurately classified as a hazardous material under the current system. If Bakken crude is classified similarly to other crude oil, it is reasonable to expect that all crude oil shipped by rail be included in the July 23, 2014, proposed rule.

Oil industry and railroad officials have publicly raised concern that this Emergency Order may cause trains hauling oil more vulnerable to terrorist attack. Even so, BNSF Executive Chairman Matthew K. Rose said it is a fair question for cities know what is moving through their towns.ⁱⁱⁱ

Positive Train Control (PTC)

Positive Train Control (PTC) is an important safety tool to help minimize human error that may lead to a rail accident for freight and passenger trains. PTC is a technology system that monitors “the location and movement of trains, then slow[s] or stop[s] a train that is not being operated in accordance with signal systems and/or operating rules.”ⁱⁱⁱⁱ PTC implementation has been a longstanding rail safety goal for the NTSB, railroads, lawmakers, and safety advocates. An early version of PTC, called automatic train control, has been an NTSB priority since 1970. PTC’s implementation was required by federal law in the Rail Safety Improvement Act of 2008 (P.L. 110-432), but most rail operators will not be able to implement it by the December 15, 2015, deadline due to, “cost, standardization of technologies, and availability of radio spectrum.”^{liv}

To install PTC, 22,000 new antennae had to be erected, requiring separate Federal Communications (FCC) license for each radio transmitter, something the 2008 law didn’t consider.^{lv} More recently, PTC was delayed for over a year due to a historic preservation review by the FCC. On May 19, 2014, the FCC entered into memorandums of understanding (MOU) with seven Class 1 railroads¹⁰ after resolving the conflict related to historic preservation.^{lvi} As part of the agreement, Class 1s agreed to create a \$10 million “Cultural Resource Fund” to provide direct funds to Tribal Nations and State Historic Preservation Offices in support cultural and historic preservation projects. This MOU clears the way for freight railroads to begin using 11,000 poles they had previously constructed to test PTC equipment.^{lvii}

Railroad vs. Pipeline to Transport Oil

The debate between rail and pipeline is a central issue in the transport of crude oil in the United States. As originally designed, the Keystone XL pipeline was intended to move crude oil out of Canada and through the United States to the Gulf Coast and other refineries. But it is anticipated that once completed this pipeline will have some capacity support “crude oil production in the United States from producers in the Bakken region of Montana and North Dakota.”^{lviii} However, the amount of the total Bakken area crude oil that can be moved in the proposed pipelines is uncertain. Committee staff in Congress say the

¹⁰ Two Class 1 railroads that operate in Oregon, BNSF and Union Pacific, signed MOUs with the FCC.

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proposed pipeline capacity may only handle, at best, 20-25 percent of the total expected production capacity from the Bakken region, leaving producers seeking other ways to get their product to market.

The exponential growth of oil production in the Bakken region, combined with limited pipeline capacity, has made trains an attractive option for producers to get crude oil to “refineries, terminals, and/or port facilities throughout North America, including the Gulf Coast area.”^{lix} Over time, it is expected that transportation costs will also become an issue because it costs refiners approximately \$10 to \$15 per barrel to ship crude oil by rail compared to \$5 per barrel via pipeline.^{lx}

Training Resources for Emergency Responders

The exponential increase in oil trains has created a heightened concern about current resources and training available to emergency responders. Oregon currently uses federal funds to train emergency responders and hazmat employees on how to competently respond to hazmat accidents. A federal surface transportation legislation, the Moving Ahead for Progress in the 21st Century Act, (MAP-21, P.L. 112-141), included funds for states to use to train emergency responders. Oregon used these funds to hold a three-day conference in May 2014 to train emergency responders how to respond to crude oil and other hazardous material-related events. MAP-21 expires on September 30, 2014. However, inclusion of these types of funds in future surface transportation reauthorization bills will be important for Oregon.

USDOT Secretary Foxx requested an additional \$40 million for its agency’s budget in FY 2015 to “address prevention and response concerns regarding the safe transport of crude oil.”^{lxi} The U.S. House of Representatives recently passed its version of the FY 2015 Transportation, Housing and Urban Development (THUD) spending bill (H.R. 4745), but the House failed to include the \$40 million requested by the Secretary. Prior to the bill’s floor passage, the White House released a statement strongly opposing this House bill for failing to include these funds. The U.S. Senate has not yet acted on its transportation appropriations bill for FY 2015 (S. 2438).

Federal Requirement for Railroad Response Plans

In 1996, federal regulations were put in place for spill response plans prescribing the “prevention, containment and response planning requirements of the Department of Transportation” for the transport of oil by rail and other motor vehicles.^{lxii} The NTSB says the purpose of these spill response plans is “to help the transporter develop a response organization and ensure the availability of resources needed to respond to an oil release,” and that “[a]ccording to 49 CFR 130.31, the plan also should demonstrate that the response resources will be available in a timely manner to reduce the severity and impact of a discharge.”^{lxiii}

Currently, railroads are required to complete either a “basic” response plan or a “comprehensive” response plan for the transport of oil, which is determined based on the volume capacity of the tank rail car transporting the oil.^{lxiv} The threshold to trigger a comprehensive plan is if a railroad is hauling individual tank cars that holding more than 1,000 barrels (or carriers transporting bulk shipments that exceed the 42,000-gallon package size). CRS notes that “[c]omprehensive plans are subject to FRA approval, and must ensure by contract or other means that personnel and equipment are able to handle a worst-case discharge.”^{lxv} Any tank car holding less less than 1,000 barrels per tank car only requires a

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basic plan, which are not subject to FRA approval. The commonly used DOT-111 car generally holds around 700 barrels of oil.

According to the NTSB, “[c]urrent regulations do not require railroads transporting crude oil in multiple tank cars to develop comprehensive spill response plans and have resources on standby for response to worst-case discharges. Although simple plans must be developed, the plans are not reviewed to evaluate the capability of rail carriers to respond to and mitigate discharges.”^{lxvi} To address this situation, the NTSB has recommended that “the threshold for comprehensive plans be lowered to take into account the use of unit trains,” or “blocks of tank cars transporting oil,”^{lxvii} which were rarely in use when the 1996 regulation went into effect.¹¹ This would be more in keeping with current “U.S. Coast Guard regulations for marine tank vessels [that] require spill response planning to address a worst-case discharge, which is defined as the entire cargo on the vessel.”^{lxviii}

Railroad Crew Size

Crew size has become an issue in North America after the Lac Mégantic accident when a train had been left unattended. In that event, a single operator secured the train uphill from Lac Mégantic in the town of Nantes. In the early AM hours, the train descended downhill to the neighbor town of Lac Mégantic, destroying its downtown and killing 47 people. The initial determination after the accident revealed that insufficient braking force applied to the train on the 1.2 percent grade and a lack of crew members attending the train were both safety factors.^{lxix} The “Canadian government has since issued an emergency order banning one-person crews on trains carrying hazardous cargo, such as crude oil.”^{lxx}

Two-person crews had been nearly universal in the United States in the early 1990s. However, changes in technology and operating practices has led some short line operators running trains with single crews.^{lxxi} Today in the United States, most rail operators use two-person crews even though FRA regulations do not specify how many persons must operate a train. Legislation has been introduced in Congress to require two-person crews on all trains (H.R. 3040). On April 9, 2014, the USDOT “announced its intention to issue a proposed rule requiring two-person train crews on crude oil trains and establishing minimum crew size standards for most main line freight and passenger rail operations.”^{lxxii}

Rail Delays

The increase of crude oil transport via the U.S. rail system is disrupting other time sensitive commodities needing to be shipped in a timely manner. Over the past year, delays reportedly caused spoilage for many crops. Midwest farmers have told lawmakers and other officials that trains carrying crude and other freight are delaying fertilizer deliveries, and these delays could jeopardize the fall crop.^{lxxiii} Constraints on the ability to move other commodities due to limited rail capacity will continue to be a national issue.

¹¹ As noted by the NTSB, “In the preamble to the June 17, 1996, final rule, the Research and Special Programs Administration (RSPA) stated its belief that 42,000 gallons in a single packaging is an appropriate and reasonable liquid quantity for a finding that a release would cause substantial harm to the environment, and thus should be the threshold for comprehensive planning. However, RSPA noted that on the basis of available information, no rail carrier was transporting oil in a quantity greater than 42,000 gallons in tank cars. During 1996, when the rulemaking was being considered, there were only 67 tank cars listed in the AAR UMLER19 file with a capacity equal to or greater than 42,000 gallons. Only six of these cars were being used to transport oil or petroleum products.”

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President of the National Farmers Union told *Reuters* weeks would pass “before trains reach grain farmers in Montana and the Dakotas ... easily leading to thousands of dollars of losses per farm family.”^{lxxiv} Delays were also exacerbated by a harsh winter that impacted rail traffic across the entire system. BNSF officials “acknowledged that they have sometimes failed to provide a reliable link between farmers and markets,”^{lxxv} and that they need to lay down more trackage to accommodate both the existing agriculture markets and new demand caused by oil shipments.

Passenger rail service was also impacted by increased rail congestion. In February 2014, National Public Radio reported Amtrak trains running on the Empire builder, a “popular route between Portland, Seattle and Chicago, are often delayed for hours”^{lxxvi} due to congestion caused by “an influx of trains hauling crude oil across the Northern Plains.”^{lxxvii} While the National Association of Railroad Passengers requested USDOT Secretary Foxx to intervene, his office has said “the Surface Transportation Board ultimately has the authority to enforce Amtrak's right to service preference on freight tracks to maintain high levels of Amtrak on-time performance.”^{lxxviii} In spring 2014, Amtrak announced schedule changes “in hopes of giving passengers a better chance to arrive on time amid chronic freight traffic congestion.”^{lxxix} These changes went into effect in April 2014 and added three hours to the trip.

Section #2

**Federal & State
Agencies Roles &
Responsibilities**

Federal Agencies Roles & Responsibilities

This information is directly reprinted from CRS Report, U.S. Rail Transportation of Crude Oil: Background & Issue for Congress, February 26, 2014

The **Federal Railroad Administration** (FRA) has jurisdiction over railroad safety. It has about 400 federal inspectors throughout the country and also utilizes state railroad safety inspectors. State inspectors predominantly enforce federal requirements because federal rail safety law preempts state law, and federal law is pervasive. The FRA uses past incident data to determine where its inspection activity should be targeted, although the FRA Administrator recently stated that in light of the growth of crude-by-rail transportation, the agency also must look for “pockets of risk.” FRA regulations cover the safety of track, grade crossings, rail equipment, operating practices, and movement of hazardous materials (hazmat).

The **Pipeline and Hazardous Materials Safety Administration** within DOT (PHMSA) issues requirements for the safe transport of hazmat [packaging¹²] by all modes of transportation. PHMSA develops regulations and standards for classifying, handling and packaging hazardous materials in the United States. The FRA enforces with respect to railroads.

Rail incidents are investigated by the **National Transportation Safety Board** (NTSB), an independent federal agency. The NTSB makes recommendations toward preventing future incidents based on its findings. Unlike the FRA, the NTSB is not required to weigh the costs against the benefits when considering additional safety measures and it has no regulatory authority. Many of the NTSB’s recommendations concerning oil transport by rail are identical to those it previously issued for transporting ethanol by rail. While the FRA has largely agreed with NTSB’s recommendations, its rulemaking process involves consultation with industry advisory committees, and it must determine which of the many rail safety measures under evaluation deserve priority. Implementing a change in FRA regulations can take years.

NTSB’s recommendations [and] its rulemaking process involve consultation with industry advisory committees, and it must determine which of the many rail safety measures under evaluation deserve priority. Implementing a change in FRA regulations can take years.

U.S. safety requirements apply to any train operating in the United States, regardless of its origin or destination. Canadian safety regulations are very similar but do not exactly mirror U.S. requirements. Cross-border shipments must meet the requirements of both countries. Safety standards established by the rail industry, which often exceed government requirements, apply to both U.S. and Canadian railroads.

National Contingency Plan (NCP)

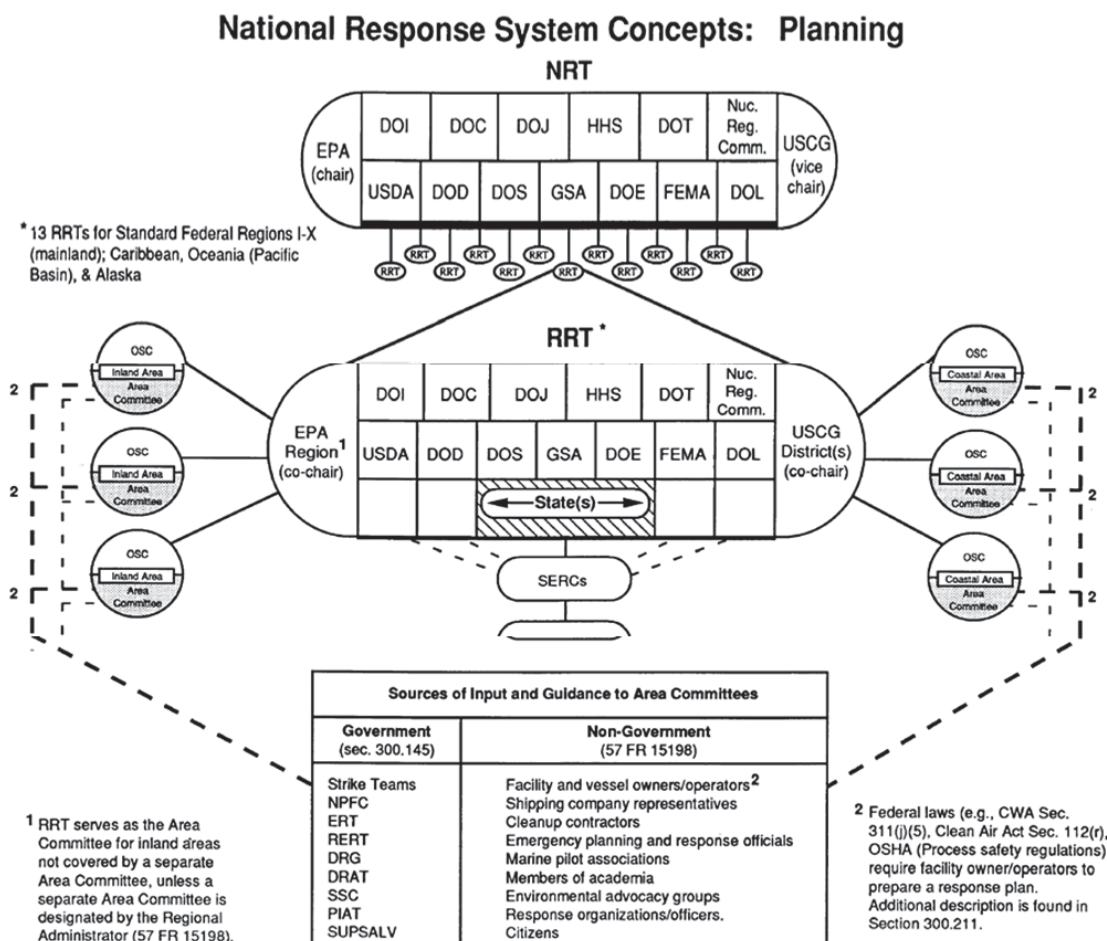
When a rail incident results in the release of oil, state, territorial, or local officials are typically the first government representatives to arrive at the scene and initiate immediate safety measures to protect the public. The National Oil and Hazardous Substances Pollution Contingency Plan, often referred to as the National Contingency Plan (NCP), indicates that state, territorial, or local officials may be responsible for conducting evacuations of affected populations. These emergency responders also may notify the National Response Center to elevate an incident for federal involvement, at which point the coordinating framework of the NCP would be applied.

¹² In this case, meaning the rail tank car.

Federal Agencies Roles & Responsibilities

Unlike most federal emergency response plans, which are administrative mechanisms, the NCP is codified in federal regulation and is binding and enforceable. The NCP regulations apply to applicable spills from vessels, pipelines, onshore facilities, and offshore facilities. The definition of “onshore facility” includes, but is not limited to “motor vehicles and rolling stock.”

If an oil discharge affects navigable waterways, shorelines, or “natural resources belonging to, appertaining to, or under the exclusive management authority of the United States,”⁴⁶ Section 311 of the Clean Water Act, as amended by the Oil Pollution Act of 1990, Section 311(c), provides explicit federal authority to respond. The term “discharge” is defined broadly and is not linked to specific sources of oil. The President has the authority to perform cleanup immediately using federal resources, monitor the response efforts of the spiller, or direct the spiller’s cleanup activities. Several executive orders have delegated the President’s response authority to the Environmental Protection Agency (EPA) within the “inland zone” and to the U.S. Coast Guard within the coastal zone, unless the two agencies agree otherwise.⁴⁹ The lead federal agency serves as the On-Scene Coordinator to direct the federal resources used in a federal response.



Source: National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300, Subpart B—Responsibility and Organization for Response, Section 300.105—General Organization Concepts.

State Agencies Roles & Responsibilities

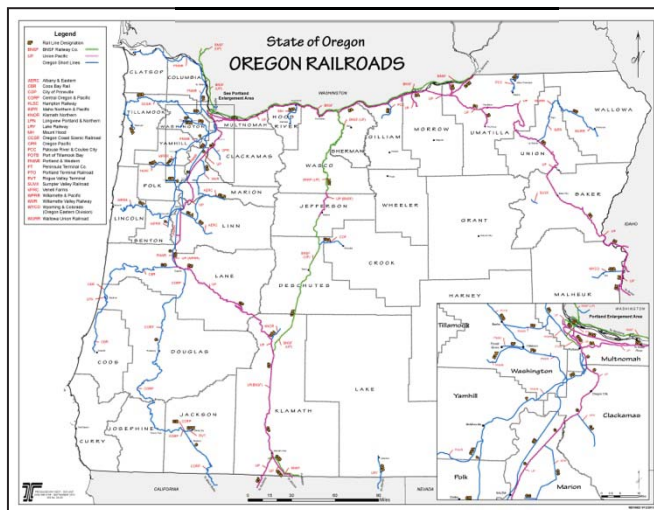
Oregon Department of Transportation (ODOT) – Rail Division

Relevant statutory authority: **ORS 824.082**

Lead on Rail Inspection & Rail Safety

- Acts as an agent for the FRA by supplementing their rail inspection activities
- Inspects railroads and shippers to ensure their compliance with inspection and maintenance requirements
- Responsible for crossing safety authority over all public highway-railroad crossings
- Manages 150 miles of state-owned railroad right of way along the Astoria Line and the Oregon Electric Line
- Regulates clearances between railroad tracks and structures to ensure the safety of railroad employees

Oregon Freight Rail Map



History & State Rail Inspectors Authority

The 1970, Congress passed the Railroad Safety Act (P.L. 91-458), which authorized states to work in partnership with the FRA to enforce federal safety regulations. Oregon elected to join the State Rail Safety Participation Program in 1974, which gave the state supplemental safety inspections authority including the ability to ensure railroads adhere to regulations governing the safe transportation of all commodities. Participation allowed the state to hire state rail inspectors who have the authority to gain compliance from rail operators through warnings, recommendations for formal warning letters issued by FRA’s Safety Division of the Office of Chief Counsel, recommendations of a civil penalty assessment, recommendation of disqualification or suspension from safety-sensitive service, and, under the most extreme circumstances, recommendations for emergency action. Participation also allows ODOT to work with rail operators on safety culture to ensure trains operating in Oregon are as safe as possible.

ODOT Rail Division has seven rail safety inspectors on staff: two motive power and equipment inspectors, two track inspectors, one hazardous materials inspector, one operating practices inspector, and one grade crossing signal inspector. In addition, Rail Division has three crossing safety inspectors who perform a variety of duties related to the safety and regulation of railroad crossings in Oregon. This includes one crossing safety field inspector and two railroad employee walkway and clearance inspectors.

ODOT’s inspectors supplement the work of FRA inspectors, which include a chief inspector, one crossing trespass inspector, one hazardous materials inspector, two operating practices inspectors, one signal and train control inspector, three motive power and equipment inspectors, two track inspectors, one industrial hygienist, one headquarters bridge inspector, and one headquarters Positive Train Control specialist.

Track Quality: The federal government allows railroads to operate trains according the condition of the track or class. Each class of track has requirements that must be met in order to operate and travel at speeds allowed within that class. Tracks in Oregon meet federal requirements for the class of track and the speeds operated over them. At this time, ODOT Rail Division staff report track inspectors are comfortable with overall track condition in Oregon.

Track Inspection: The FRA recently stated that in light of the growth of crude-by-rail transportation, the agency also must look for “pockets of risk.” ODOT Rail Division has also changed from looking at

State Agencies Roles & Responsibilities

railroads on a random basis to analyzing the non-complying conditions and spending more time if warranted at locations that have shown to be of possible concern.

Inspection Reports & Accident Data: FRA's public website has much of this information at <http://safetydata.fra.dot.gov/OfficeofSafety/default.aspx>. ODOT Rail also shares inspection reports, locations where hazardous materials are shipped, and any concerns inspectors may have with sister agencies and emergency responders. ODOT Rail can get information on train movement and what is on the train when performing inspections.

Rail Operators Emergency Response Plans: Matt Garrett, ODOT Director, notified ODOT Rail Division on April 23, 2014, that it should "[i]mmediately direct the railroads to provide the information on their movement of hazardous materials in Oregon in 2013 that is required under ORS 824.082," the state law that requires for the notification on the movement of hazardous materials.^{lxxx}

HazMat Checks: Routine inspection for hazmat on trains is done by both FRA and state inspectors. Railroads also have Automatic Equipment Identification readers that check trains for location of cars placed in the train.

ODOT's Role in Prevention, Response, & Mitigation of a Rail Incident

ODOT is a member of the State Emergency Response Commission (SERC). In the event of a catastrophe, ODOT is a support agency to local governments and other state agencies. ODOT supports mitigation efforts.

Prevention

- Policy and Oversight: ODOT serves as an additional inspection agency partnering with FRA to monitor railroads in Oregon; the FRA has primary jurisdiction.
- Agency inspectors regularly monitor train speeds, track conditions, train car placement and tanker car valve closure settings. They walk rails, inspect cars, review procedures and evaluate safety at crossings.
- Outcome: Monitors railroad fleet and infrastructure in a way that improves railroad safety by proactively identifying defects and potential threats and working with railroads, the FRA and other partners to resolve.
- Works to ensure railroads communicate necessary information in a timely manner to emergency response agencies.

Response

- ODOT will provide support such as maintaining roads, establishing alternate routes, and making available equipment, staff and other resources.

Mitigation

- On state highways, ODOT provides support such as traffic control and establishes alternate routes. For local access, ODOT makes available equipment, staff and other resources as requested.

Policy

- ODOT is leading an effort to update administrative rules implementing state statutes that require railroads to report details of hazardous material shipments to emergency response agencies.

State Agencies Roles & Responsibilities

Office of the State Fire Marshal (OSFM)

Relevant statutory authority: **ORS 453.520**

Lead Agency for Planning for Hazmat Response, Training Emergency Responders, & Survey of Hazardous Substances

- Surveys businesses and government facilities for information about the presence of hazardous substances, and collects information about incidents involving hazardous substances
- Provides planning and training assistance to local jurisdictions on hazardous substance emergency response and preparedness

PROGRAMS IN OSFM

Community Right to Know (CR2K) Program (passed in 1985)

Requires OSFM to annually conduct reviews of facilities with the potential to possess hazardous substance; this includes two facilities in Oregon that receive and store crude oil:

- Data collected is provided to emergency planners and responders and is available to the public
- Emergency planners and responders use CR2K data to plan for emergencies in communities
- Oregon HazMat Teams respond to incidents in Oregon
- The Hazardous Substance Possession Fee (HSPF) funds the program
 - Crude oil is not subject to the HSPF

State Emergency Response Commission (SERC)/Local Emergency Planning Committee (LEPC)

Oregon statute (ORS 453.520) designates the state fire marshal to undertake all duties of a SERC as required by the federal Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. 11001 et seq.). The SERC is responsible for the following:

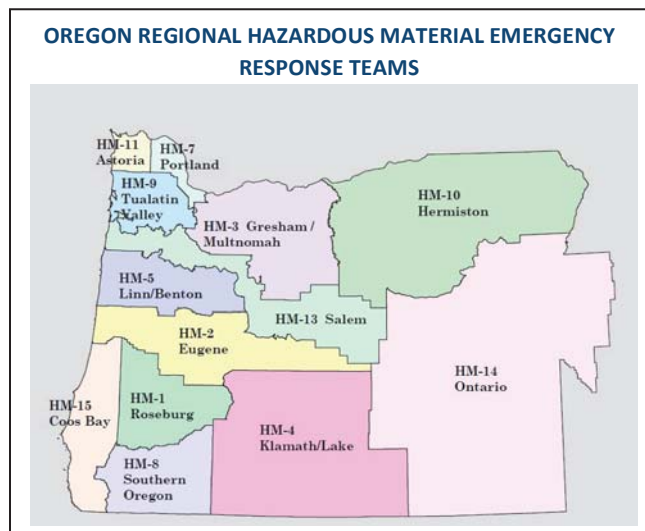
- Designating *Emergency Planning Districts* (EPDs) throughout Oregon
- Establishing LEPCs within the EPDs
- Appointing membership to the LEPCs
- Providing review and comment on local community emergency response plans

The SERC receives Hazardous Material Emergency Preparedness grant funds from PHMSA. The funds are used to support planning, training, and exercise projects related to hazardous materials emergency response to transportation incidents. Oregon receives approximately \$278,000 annually. At least 80 percent of those funds are passed through to local first responder agencies. The remaining 20 percent is used by OSFM to facilitate additional planning, training, and exercise projects.

State Hazardous Materials Response Teams

There are 13 state hazmat teams located throughout Oregon. The HazMat Team Program is a partnership with local government, the OSFM, and industry:

- The Petroleum Load Fee (PLF) funds the HazMat Teams Program
- Crude oil is not subject to the PLF



State Agencies Roles & Responsibilities

ACTIVITIES

- Held a Hazardous Materials Response Teams Conference (2014) geared toward hazmat response during transportation including sessions on crude oil response, an ‘after action’ on rail incidents, and sessions on rail response equipment
- The EPA is working within Region 10¹³ to hold regional sessions related to crude oil response. The state’s HazMat Teams will be assisting with the training. The OSFM and the Office of Emergency Management are working to refine the interstate mutual aid process through the Pacific Northwest Emergency Management Agreement. This agreement allows governors to share resources across state lines in absence of a declared emergency

OSFM’s Role in Prevention, Response, & Mitigation of a Rail Incident Involving Crude or Other Hazardous Materials

Prevention

- Acts as a supporting agency to state level response; facilitates subject matter expertise as it applies to fire and hazardous material impact and concerns resulting from a hazardous spill

Response

- Manages Oregon’s 13 Hazardous Materials Emergency Response Teams (HMERT)
- HMERTs protect life, property, and the environment by responding to chemical emergencies and minimizing the dangers associated with them
- HMERTs are maintained as a technical resource for local incident commanders and have received specialized training to respond to chemical, biological, radiological, nuclear, and explosive incidents
- Thirteen HMERTs are strategically located statewide to provide a maximum two hour response time
- The HMERTs also provide outreach training to local responders and industry to ensure communities are prepared to respond to a hazardous materials incident
- HMERTs are requested by local emergency responders through the Oregon Emergency Response System
- The OSFM also manages three, Type II All-Hazard Incident Management Teams (IMT)
- The OSFM deploys IMTs at the authorization of the Governor to provide comprehensive incident management during conflagrations or other all-hazard emergencies as declared by the Governor

Mitigation

No Role

Policy

No Role

¹³ EPA’s Region 10 includes Oregon, Washington, Idaho, and Alaska

State Agencies Roles & Responsibilities

Oregon Department of Environmental Quality (DEQ)

Relevant statutory authority: ORS 468B.300, 466.610

Lead on Cleanup Oversight, the National Contingency Plan, & Other Authorities Delegated by EPA

DEQ is a regulatory agency charged with protecting the quality of Oregon's environment. It is responsible for participating in a response as it relates to the National Oil and Hazardous Substances Pollution Contingency Plan, frequently called the National Contingency Plan (NCP)¹⁴. The NCP is the federal government's blueprint for responding to both oil spills and hazardous substance releases. The plan outlines national response capabilities and promotes coordination among the hierarchy of responders.

The National Contingency Plan Does The Following:

- Establishes general responsibilities of the response organization including federal On-Scene Coordinators and state On-Scene Coordinators
- Establishes National *and* Regional Response Teams (RRTs)
- RRTs coordinate preparedness, planning, and response at the regional level
 - Consist of representatives of federal agencies that are a member of the National Response Team and state and local government representatives
 - Also consists of an incident-specific team made up of members of a standing team that are activated for a response
 - DEQ is a member of the Region 10 RRT; the Oregon Health Authority, the OSFM, and the Office of Emergency Management are associate members of the Region 10 RRT

Federal & State Coordinators of NCP

- Federal On-Scene Coordinators are determined by spill location
 - The U.S. Coast Guard (USCG) is the Federal On-Scene Coordinator for releases to the Pacific Ocean, the Columbia River from the mouth of the river to Bonneville Dam, and the Willamette River to the Oregon City falls.
 - EPA assigns a Federal On-Scene Coordinator for all other inland spills affecting or threatening federally defined “navigable waters”
 - ORS 468B.300 designates the State On-Scene Coordinator as an official appointed by DEQ
 - The Federal On-Scene Coordinator, State On-Scene Coordinator, and the Responsible Party Representative form the unified command that directs response actions after a spill of oil or hazardous material

State Oil Spill Contingency Plan – Facilities

- *ORS 468B.345 through 469B.390 require an oil spill contingency plan for facilities that transfer oil over water, liquid petroleum pipelines (including inland pipelines), tank ships carrying petroleum in bulk (including barges), and commercial vessels over 300 gross tons*
 - Provides details on response equipment and personnel under contract or other approved means
 - Documents training, drills, and exercises conducted by the plan holder
 - Plans document plan holder’s capability to implement a quick and effective response

Transport of crude oil by rail through Oregon was not prevalent when the state’s spills and emergency response laws were developed, but the laws ensure storage facilities and transporters of large volumes of oil are prepared to respond to spills.

DEQ’s Role in Prevention, Response, & Mitigation of Oil & Hazardous Materials Spill Cleanup

As the lead state agency for cleanup oversight, DEQ actively responds to oil spills from train derailments or other causes on a round-the-clock basis. ORS 466.610 through 466.680 describe DEQ’s authority relating to the cleanup of oil and hazardous materials. When notified by the Oregon Emergency Response

¹⁴ See page 22-23 of this report.

State Agencies Roles & Responsibilities

System or the National Response Center, DEQ initiates communications with local, tribal, state and federal partners and rail carriers to commence a timely and coordinated response.

DEQ spill response staff are trained in the National Incident Management System. This gives them the technical skills required to evaluate and respond to spills of crude oil and other hazardous materials. DEQ has emergency response staff located in each region of the state, and can draw additional expertise from other staff in the environmental cleanup programs who have participated in training and spill response drills. Multiple staff allows DEQ to effectively manage spills of various sizes and levels of complexity.

Prevention

- Works with industry, state agencies, and federal agencies including the USCG and EPA, and local communities through the Northwest Area Committee and Regional Response Team to develop oil spill response plans, train staff, and conduct exercises to confirm successful execution of plans. These plans identify sensitive natural or cultural resources and specific response strategies to minimize impacts to these resources. Plans have been developed for navigable waters of the state, which include the Willamette River below Oregon City and the Columbia River. The response strategies are incorporated into annual updates to the Northwest Area Plan, which DEQ and its partners use during an incident response.
- Regularly participates in and evaluates industry drills and exercises.

Response

- Coordinates with other local and state agencies, rail carriers, and federal partners to cleanup oil and hazardous material spills. Works with these partners to form a unified command to manage a spill.
- During the initial phase of an incident, DEQ works with local responders to provide technical assistance on response strategies and tactics to minimize impacts caused by the spill. During this phase, DEQ will provide notifications to other parties such as drinking water system operators and work with oil spill response organizations to implement defensive measures to control and recover oil outside the spill zone.

Mitigation

- Will work with partners to contain and clean up any oil and other contaminants spilled into rivers and streams and land. This part of the response includes overseeing worker safety, waste disposal, natural resource damage assessment, and restoration of property damaged by spills.

Policy

- Works to ensure spill response planning and preparedness activities occur inland along rail lines to address risks of increased oil transport.
- Coordinates caches of equipment appropriate for protection of the environment from the effects of an oil spill located at strategic locations along railways.
- Advocates for development and testing of tactics to ensure responders are able to quickly and effectively protect the environment along railways.
- Rail carriers, federal and local response agencies, and DEQ should conduct exercises together to ensure a well-coordinated response.

State Agencies Roles & Responsibilities

Oregon Department of Energy (ODOE)

Relevant statutory authority: **ORS 469.605, 176.809**

Lead on Shipment of Radioactive Material

ODOE has specific authority and responsibilities related to transportation of radioactive materials, including authority to issue permits for shipments (an authority it has delegated to ODOT), determine best and safest routes, and coordinate emergency preparedness and response with appropriate local, state and federal entities (ORS 469.605 through 469.619). This experience can offer some procedural insight that is transferable for those involved in the transport of crude oil and other hazardous materials.

ODOE's Role in Prevention, Response, & Mitigation of an Oil Train Incident

Prevention

ODOE helps train local emergency responders in how to handle a transportation accident involving radioactive materials.

Response

Through its Petroleum Contingency Plan (ORS 176.809), ODOE develops and maintains emergency alert and notification procedures to be taken during a severe petroleum shortage. The plan also identifies emergency preparedness and response actions to monitor and track fuel disruptions.

Mitigation

No role.

Policy

Through its Energy Facility Siting Division, ODOE has the authority for siting certain pipelines, including those used for crude petroleum transportation. Projects proposed to the Energy Facility Siting Council (EFSC) are evaluated against 16 siting standards including soil protection and scenic resources. EFSC does not have statutory authority to site crude oil production, refining or storage facilities.

ODOE is also responsible for coordinating state comments on projects under federal authority, such as Liquefied Natural Gas export facilities and associated pipelines.

State Agencies Roles & Responsibilities

Oregon Emergency Management (OEM)

Relevant statutory authority: **ORS 401**

Focuses on Coordination with Local Jurisdictions & Central Hub for Incident Operations

The purpose of the Office of Emergency Management is to execute the Governor's responsibilities to maintain an emergency services system as prescribed in ORS 401 by planning, preparing, and providing for the prevention, mitigation, and management of emergencies or disasters that present a threat to the lives and property of citizens of and visitors to the state of Oregon.

- Maintain a cooperative liaison with emergency management agencies and organization of local governments, other states, and the federal government;
- Provide for and staff a State Emergency Operations (Coordination) Center to aid the Governor and the office in the performance of duties;
- Serve as the Governor's authorized representative for coordination of certain response activities and managing the recovery process;
- Enforce compliance requirements of federal and state agencies for receiving funds and conducting designated emergency functions;
- Administer grants relating to emergency program management and emergency services for the state;
- Coordinate the activities of all public and private organizations specifically related to providing emergency services within this state;
- Make rules that are necessary and proper for the administration of ORS 401;
- Establish task forces and advisory groups to assist the office in achieving mandated responsibilities; and,
- Establish training and professional standards for local emergency program management personnel.

OEM coordinates with local jurisdictions to develop and maintain city and county emergency operations plan. In the case of an incident involving oil trains that necessitates a state level response and activation of the ECC, OEM acts as a 24-hour central reporting point for the notification of oil and hazardous materials spills and other emergency incidents.

OEM's Role in Prevention, Response, & Mitigation of an Oil Train Incident

Prevention

- Maintain statewide Emergency Operations Plans (EOP) and support county level EOPs.
- OEM works with counties to support local efforts to educate the public about risks of disasters.
- For example, OEM participated in an event held at a Portland rail yard designed to educate the public about what the agency does in a disaster and how the agency would be impacted if there were a crude oil train derailment.

Response

- Coordinates state-level response in support of the agency in the activation of the ECC.

State Agencies Roles & Responsibilities

- Coordinates rapid deployment of resources to provide specialized lifesaving assistance to local authorities when activated for incidents.
- Conducts a rapid needs assessment of affected areas.
- Identifies status of all assessments, impacts to the response, infrastructure, populations, and repair and restoration timelines.
- Coordinates with the Governor's Office to activate Governor's Disaster Cabinet.
- Responds to information needs of governor, adjutant general, and governmental leadership.

Mitigation

- Minimal action for mitigation (pre-disaster) because authorities reside with other state and federal agencies.
- Post-disaster mitigation actions are numerous provided there is a federal disaster declaration.

Policy

- In accordance with ORS 401.094, OEM maintains the state's 24-hour central reporting point for the notification of oil and hazardous materials spills and other emergency incidents via the Oregon Emergency Response System (OERS).
- Coordination and assignment of requests from county-level EOCs to assist local jurisdictions when additional resources are requested related to an oil or hazmat incident.
- OEM will coordinate with the Federal Government when necessary.

State Agencies Roles & Responsibilities

Department of State Lands (DSL)

Relevant statutory authority: **ORS 273-274, 196; OAR 141-085**

Not a Lead Agency Except, Potentially, for Events on State Lands

DSL manages nearly 640,000 acres of grazing and agricultural land: 131,000 acres of forestland, including the Elliott State Forest in Coos and Douglas counties; and, 800,000 acres of off-shore land, estuarine tidelands, and submerged and submersible lands of the state's extensive navigable waterway system. It does not have a direct role in first response or oversight of rail safety.

DSL's Role in Prevention, Response, & Mitigation of a Rail Incident

DSL's role in oil spill response planning is limited. Two program areas—ownership of state land (ORS 273 through 274) and regulating removal and fill activities in state waters (ORS 196 and OAR 141-085)—could be engaged depending where a spill occurs.

Prevention

No role.

Response

- Is a member of the Oregon Emergency Response System and is notified of emergencies that affect two distinct program areas:
 1. Land owned by the state and managed by DSL (for example, bridges over the Willamette River).
 2. If a spill occurred on state land, DSL may pursue legal remedies for trespassing and/or contaminating state-owned land.

The DSL director has the authority to close state lands under our management in the event of an emergency.

- Wetlands and Waterways regulation: DSL regulates removal and fill of material in Oregon waters, which includes wetlands, streams, rivers, reservoirs, tidal bays and the territorial sea. If a spill occurred in a wetland or waterway, DSL could be involved in issuing an emergency permit to remove or place material.

Mitigation

- Legal options in the event that derailed cars or hazardous materials are released on state-owned land and not addressed in a timely manner: 1) DSL could sue the responsible party for trespassing and request damages for contamination; or 2) begin the removal of cars and contaminated material, and sue to recover costs once the work is completed.
- Impose civil penalties for trespassing as allowed under state statute. DSL may require an authorization to use state land from the responsible party if a long-term cleanup effort is ordered by the EPA or Oregon DEQ. The type of authorization required will depend on the nature of the order. DSL administers remedial and restoration activities on state-owned waterways through OAR 141-145.
- Order the removal of materials in a wetland or waterway. Both the presence of hazardous materials and rail cars may be a violation of the state's removal-fill law. We could open an enforcement file and order the removal of materials, and DSL could impose civil penalties for a violation as allowed by state statute. DSL would likely not open an enforcement file if DEQ was handling the violation.

Policy

None pertaining specifically to rail transport of oil.

State Agencies Roles & Responsibilities

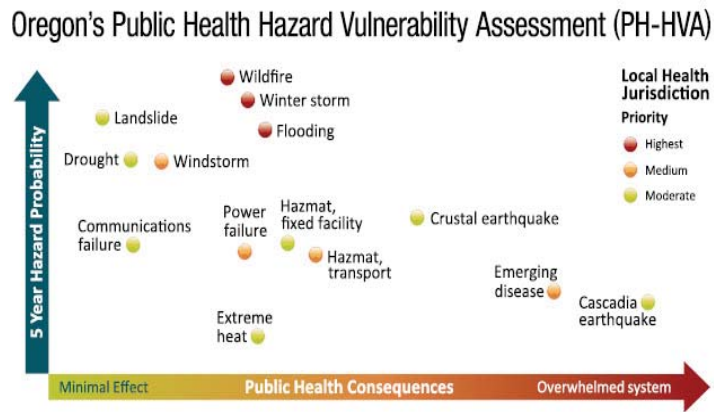
Oregon Health Authority – Public Health Division

Relevant statutory authority: ORS 431.035 – ORS 443.449

In an emergency, lead agency on issues that directly affect the health of the public

The mission of the Oregon Health Authority (OHA) is helping people and communities achieve optimum physical, mental and social well-being through partnerships, prevention and access to quality affordable health care.

The mission of the Public Health Division is promoting health and preventing the leading causes of death, disease and injury in Oregon.



Prevention

- OHA participates as a member of the Region 10 Response Team’s (RRT10) Executive Committee. OHA is represented by the Environmental Public Health section of the Public Health Division’s Center for Prevention & Health Promotion. *Funding support is needed to continue this collaboration.*
 - OHA routinely develops communication tools including talking points, public health guidance, and media messages for use during an emergency.
 - Provides technical assistance to promote regional planning for mass casualty response in emergency medical service and healthcare settings.
- If funding is available-*
- Work with Oregon Burn Center and other health care providers to refine and operationalize the Oregon Region 1 Burn Mass Casualty Plan through collaborative planning work sessions.
 - Develop and implement trainings and exercises to prepare health and medical personnel to respond to a railroad hazardous materials emergency.

Response

- OHA has a Public Health Duty Officer program and would be notified immediately by the Oregon Emergency Response System in an emergency that could potentially affect the health of the public.
- OHA will set up an incident management team to work in the Public Health Agency Operations Center (AOC) to support local health departments and the health care system. The AOC will:
 - Provide Public Health emergency operations coordination.
 - Exchange information with partners to determine a common operation picture.
 - Work with local public health and the health care system to identify at-risk populations.
 - Develop guidance for clinicians and health messages for the general and at risk populations.
 - Provide access to medical surge resources, such as additional personnel, as well as medical material, such as pharmaceuticals, PPE, ventilators, etc.
 - Activate public health surveillance in collaboration with federal and local public health partners as necessary. OHA would contact the federal Agency for Toxic Substance and Disease Registries (ATSDR) for epidemiological follow-up assistance.
 - Identify responder safety and health issues; coordinate with partners to provide PPE guidance and to monitor responder health as necessary.

State Agencies Roles & Responsibilities

- Active SERV-OR, the state medical volunteer pool, and organize, assemble, dispatch and demobilize volunteers as necessary.
- Consult with RRT, DEQ and other partners as needed to provide feedback on in-situ burning and dispersants.
- Coordinate public health, medical and mental/behavioral health services in the event of mass care operations.
- Collaborate with the State Medical Examiner's Office in the event of Mass Fatality operations.

Mitigation

- OHA will continue to conduct surveillance of public health as necessary, and determine the burden on the health system through ESSENCE syndromic surveillance.
- OHA will consult with DEQ/RRT as needed.

Policy

ORS 431.035 stipulates the Director of the Oregon Health Authority shall appoint a Public Health Director to perform the duties and exercise authority over public health emergency matters in the state and other duties as assigned by the director.

ORS 431.110 stipulates the Oregon Health Authority shall have direct supervision of all matters relating to the preservation of life and health of the people of the state.

ORS 431.575 requires the Oregon Health Authority to develop a comprehensive emergency medical services and trauma system.

ORS 431.623 creates the OHA Emergency Medical Services and Trauma Systems Program for the purpose of administering and regulating ambulances, training and licensing emergency medical services providers, and establishing and maintaining emergency medical systems.

ORS 433.216 gives the Public Health Director the authority to detain any public or private conveyance for inspection or investigation if s/he finds that there is an imminent risk of the introduction into the state of any dangerous communicable disease or toxic substance which presents a substantial threat to public health. If the investigation reveals a substantial threat to public health, **ORS 433.220** gives the Public Health Director the authority to issue an order for testing, medical examination or treatment, isolate or quarantine such persons or require the passengers and persons conveying materials to follow the authority's rules for the control of the specific communicable disease or prevention of harm to the public health from the toxic substance materials.

ORS 433.441 upon the occurrence of a public health emergency, the Governor may declare a state of public health emergency as authorized by ORS 433.441 to 433.452 to protect the public health.

ORS 433.443 describes the authority of the Public Health Director during a public health emergency.

ORS 433.446 describes the authority of the Governor during state of public health emergency, including seeking assistance under the Emergency Management Assistance Compact to obtain additional resources.

ORS 433.449 allows the Public Health Director to prescribe measures to provide for the safe disposal of human remains as may be reasonable and necessary to respond to the public health emergency.



State Agencies Roles & Responsibilities

Oregon Department of Forestry (ODF), Fire Protection Division

Relevant statutory authority: ORS 477.005, 477.066, 477.660 and 477.695

Lead on Suppression of Fire Spreading to Forestland

ODF's Fire Protection Division mission is to provide for the prevention and suppression of wildfires by implementing a complete and coordinated fire protection system for the state of Oregon (ORS 477.005). Historically, railroad operations and trains have been a source of significant fires in Oregon. Primary causes include track maintenance activities, over-heated brakes, and exhaust. ODF would continue to engage these events, as it has in the past. In the case of derailments with oil trains, emergency responders from ODF would initiate standard hazardous response protocols and defer to local fire service expertise before engaging in wildfire suppression activities in close proximity to hazardous materials.

ODF's Role in Prevention, Response, & Mitigation of an Oil Train Incident

Prevention

ODF does not have a role in preventing oil train incidents specifically. However, railroad activities through forestlands within a forest protection district are subject to a number of fire prevention regulations and historically have been a major component of ODF fire prevention planning. Protection districts maintain communication with railroad operators, occasionally inspect equipment and operations, issue orders to maintain clearing of vegetation from railroad rights-of-way (ORS 477.695), and during periods of high fire danger may issue orders requiring additional precautions (ORS 477.660) such as including water cars to be included in trains to wet down the right-of-way.

Response

ODF maintains multiple facilities for detection of wildland fires and coordinates with local 9/11 dispatching. Upon receiving notice of a fire that has spread to or threatens forestland, ODF will send appropriate fire suppression resources according to pre-planned dispatch for the location, fire danger conditions, and severity of the incident. Resources may include engines, personnel, dozers and aviation resources. ODF personnel are fully trained in Incident Management and will coordinate with other responders accordingly. ODF will need continued coordination with OSFM on responses to wildfires that contain hazardous materials to provide for first responder safety and effectiveness.

Mitigation

No role.

Policy

"If the forester determines the fire is either burning uncontrolled or the owner or operator (railroad and adjoining owners) does not then have readily available personnel and equipment to control or extinguish the fire, the forester...shall summarily abate the nuisance thus constituted by controlling and extinguishing the fire" (ORS 477.066).

Section #3
Findings &
Recommendations

Oregon needs timely and comprehensive information about hazardous materials shipments through the state

To adequately train and prepare emergency responders to effectively respond to an incident, responders must have access to reliable and timely information about the movement hazardous materials and access to accurate train consists.

- 1.1 The USDOT Secretary should amend the May 7, 2014, Executive Order and the July 23, 2014, proposed rule related to trains carrying “more than 1 million gallons of Bakken crude, or approximately 35 tank cars,”^{lxxxii} and require railroads to notify states of *all* crude oil being hauled by shippers. *This is in line with recommendations by Senators Wyden and Merkley.*
- 1.2 Railroads must work with OSFM – Oregon’s SERC – to share information about current movement of hazardous materials, including the specific types and amounts of hazardous materials, through Oregon for use by emergency responders. OSFM in turn will make this information available to emergency responders and the general public via the OSFM website.
- 1.3 ODOT Rail Division must work with AAR on the status of its web-enabled consist information and with OSFM to disseminate this information to local emergency responders. AAR said it would have web-enabled manifest information for use by emergency responders this summer. It currently has a 1-800 number that emergency responders can access to get consist information. Simultaneously, OSFM & OEM will work with Oregon’s emergency responders to ensure they have information on how to access existing information on rail consists.
- 1.4 Railroads need to notify Oregon’s SERC when they see an increase in the movement of a hazardous material on their rail line. Commodities shift over time, and emergency responders need to be informed in a timely manner about the nature of commodities moving through their community. OSFM will work with fire chiefs and railroads to determine what constitutes a significant change in commodities, and how and when railroads will relay this information.
- 1.5 State agencies must actively work to collect information on the movement of hazardous materials from railroads on a regular basis and ensure this information is shared with local emergency responders. See recommendation 7.1- 7.3 for specific information.

Quantification of *all* available equipment caches is needed to assess gaps

To effectively respond to an incident, emergency responders and other emergency workers need proper equipment. They also need to know what other resources are available in their area for response in the event of an emergency.

Equipment Needs

The Lac Mégantic accident demonstrated the importance of equipment for response efforts. Emergency responders there needed 33,000 liters (8718 gallons) of foam concentrate to allow for continuous uninterrupted production of foam. They were able to get the type and quantity from a nearby refinery.^{lxxxiii}

- 2.1 Railroads should better quantify and share with OSFM the type and quantity of equipment, and/or contractor on hire, and approximate time it takes to respond to a scene along the currently used rail routes in Oregon.
 - This report incorporates information shared by the railroads (see Section 5) in response to a request from the Governor (see appendices – letter to BNSF, UP, and G&W on rail safety).
 - The railroads have informed the state they have the ability to respond to an incident either using their own equipment or through contractors. The state, however, needs further quantification of this equipment. To that end, railroads must partner with OSFM to complete this work.

- Quantification is essential for state and local emergency responders to accurately assess if sufficient equipment from both public and private sources are available to respond to an event along rail lines where crude oil is shipped.
- 2.2 OSFM must work with local fire chiefs, tribal governments, regional, and bi-state entities to quantify the equipment and materials they have, and what may be needed for response including the following:
- Caches of foam (AFFF) or knowledge of cache locations
 - Foam applicators, inductors, and nozzles
 - Appropriate air monitoring capabilities specifically to detect H₂S (Hydrogen Sulfide) & Benzene
 - Proper personal protective equipment
- 2.3 OSFM must report to the Governor and Legislature by the end of September its findings on the status of equipment for local emergency responders, tribal governments, and railroads.

Threshold for railroad spill response plans needs to updated

To provide greater oversight of how railroads plan to respond to the worst-case incidences, the threshold for comprehensive plans should be lowered.

Update Threshold for Railroad Oil Spill Response Plans

- 3.1 Federal regulators should require railroads to have an oil spill response plan much like the oil companies, which are required to provide a summary of their worst-case scenario discharge and their full response resources.
- To that end, the FRA should consider adopting the NTSB’s recommendation and lower the threshold for a rail comprehensive plan to “take into account the use of unit trains.” This would be consistent with current USCG regulations that consider the entire cargo hauled as the threshold for planning for a worst-case event involving discharge.

Clarifying Emergency Response Procedures

- 3.2 OSFM, ODOT Rail Division, and OEM must coordinate with the railroads to determine how railroads should handle an emergency response in Oregon. They must coordinate with railroads’ hazmat managers who initially respond to an incident and identify when private contractors or local emergency services are used for major crude oil incidences.
- 3.3 OSFM must work to ensure federal, state, and local plans and procedures work effectively together, ensuring that Rail Operator plans and procedures synchronize with government response plans.

Additional state and federal resources needed to ensure emergency responders have necessary training

To effectively respond to an incident, emergency responders and other emergency workers need proper training, equipment, and the opportunity to participate in exercises where they successfully extinguish fires, limit damage, stop leaks of vapor and liquid, respond to health hazards, and support emergency operations to protect the public’s health and safety.

Training & Exercise Needs

- 4.1 OSFM, OEM, and OHA should continue to assess training levels of emergency responders and medical personnel.
- Work with fire chiefs to ensure emergency responders have *appropriate* levels of training, including at operations level hazardous materials technicians, hazardous materials specialists, on scene incident commanders ([see Information on training levels for emergency responders](#)).
 - Ensure proper training is available to local fire departments including the following:

- ✓ Operations level training
- ✓ Emergency Response Guidebook, National Institute for Occupational Safety & Health (NIOSH) Guide, Safety Data Sheets, physical properties and best practices; leak, spill, small fire, larger fire, etc.
- ✓ Flammable liquids training
- ✓ Basic training on rail car designs and locations where the consist is kept
- ✓ Primer on available resources between federal, state, and local, what their respective roles are, how to access them, and what equipment is available
- ✓ Hands on exercises for oil train response
- Ensure State Hazardous Materials Response Teams have the following:
 - ✓ Crude oil response training class/program to include product awareness, air monitoring implications, foam application, crude oil transportation, incident response training with an emphasis on tank construction/safety features for both over- the- road and rail
 - ✓ Continue to send technicians to the Security and Response Training Center in Pueblo, CO
- Work to ensure the National Incident Management System (NIMS), Incident Command System (ICS) and other appropriate training is provided for those who serve in the State Emergency Coordinating Center, the State Public Health Agency Operation Center, and local emergency operations centers.
- Work to ensure that medical clinicians are trained in providing appropriate treatment in health hazards associated with crude oil and other hazardous materials.
- Through OEM, work to ensure that providers of information to the media are adequately trained to speak effectively during times of crisis, and specifically in the event of a hazardous materials incident by rail.

First Responder Training Support

4.2 The state must continue to work to secure future training, exercise, and equipment funding.

- Work with PHMSA to secure future training, exercise, and equipment funds through its Hazardous Materials Grant Program.
- Support USDOT Secretary Foxx’s request for the creation of a new fund in the amount of \$40 million for training activities associated with the safe transportation of energy resources. This fund would help augment MAP-21 funds for PHMSA to provide ongoing training for emergency responders about how to respond to incidences involving hazardous materials like crude oil.
- Continue to pursue additional federal training, exercise, and equipment funds for emergency responders and other emergency workers through federal appropriations process (see Appendix, Items #2 & #3).

4.3 Advocate for expired federally-funded programs designed to assist local emergency responders. Federal funding for a program that tracked emergency/unplanned releases of hazardous chemicals and worked with LEPCs to provide information to assist in local planning efforts expired on 9/30/13.

Near Term Emergency Planning & Training Exercises

4.4 Oregon agencies involved in crude oil shipment oversight and response to a hazmat incident involving crude oil are directed to hold a table-top exercise to be scheduled for later this year. The purpose is to identify and determine best approaches and needs related to a crude oil by rail response event.

4.5 Funds should be allocated to OSFM to specifically assess the state’s needs related to emergency response involving crude oil by rail.

4.6 Emergency planners must plan and prepare annual exercises/playbook to provide emergency responders, hospital and healthcare workers, local and state public health officials, rail operators, and other responsible public safety representatives the opportunity to use equipment, test plans and procedures, sharpen skills, and communicate during a mock rail disaster.

Timely federal action needed on new tank car standards and lowering speed of trains that haul crude oil

To shore up the safe transport of crude oil and ethanol, federal regulators must update tank car standards as quickly as possible and look at additional measures to decrease speeds of trains hauling crude oil.

New Tank Car Standards

- 5.1 Federal officials should continue work to implement its new tank car standards for hauling hazardous materials
- The NTSB has been calling for new tank car standards to phase out the DOT-111 tank cars since 1991. The USDOT released draft rules on July 23, 2014, including options for enhancing tank car standards.^{lxxxiii} The rules propose new standards for tank cars constructed after October 1, 2015, and that are used to transport flammable liquids as part of certain oil trains. U.S. Secretary Foxx has said he expects the new rules to be finalized by the end of this year.
 - Regulators should continue to work with rail operators, shippers, the NTSB, and railcar manufacturers to identify the best rail car standard for hauling crude oil and ethanol.
- 5.2 Federal officials should put in place interim federal steps/improvements to older tank cars. USDOT's draft rule issued on July 23, 2014, also proposes to require existing tank cars used to transport flammable liquids as part of certain oil trains to be retrofitted to meet the selected option for performance requirements.
- On May 7, 2014, USDOT Secretary Foxx issued a safety advisory "asking — but not requiring — shippers of Bakken crude to discontinue using the older models of railroad tank cars commonly used for transporting the fuel. Instead, the department asked them to use cars built with enhanced safety features."^{lxxxiv}
 - USDOT should continue to work with railroads and facilities to garner voluntary agreements to not use DOT-111 tank cars before new regulations go into effect sometime next year.

Lower Train Speeds

- 5.3 Oregon supports the USDOT's effort in its recent draft rule from July 23, 2104, to lower train speeds
- USDOT's proposed rulemaking comments on three speed restriction options for certain trains carrying crude oil that contain any tank cars not meeting the enhanced tank car standards proposed by this rule. These options include restricting trains to 40 mph in some or all areas.
 - At the January 16, 2014, "Call to Action" meeting Secretary Foxx held with rail operators, one of the voluntary steps taken to improve the safety of the shipments of crude oil by train was for operators to run trains a lower speeds through designated urban areas for trains carrying at least one older DOT-111 tank car.
 - USDOT and AAR agreed on February 20, 2014, that beginning July 1, 2014, trains with 20 or more tank cars carrying crude (Key Crude Oil Trains) that include at least one older DOT-111 car will travel no faster than 40 mph in 46 federally designated high-threat urban areas^{lxxxv}. Prior to that day, AAR and USDOT voluntarily agreed that Key Crude Oil would adhere a speed restriction of 50 mph.^{lxxxvi}
 - Portland & Western voluntarily runs its trains hauling crude oil on the "A Line" in northwest Oregon no faster than 25 mph and 10 mph in areas such as the A Street trackage in Rainier. They also run a high rail vehicle in front of each train operating on the line to ensure the track is in good, operating condition.

Updated federal best practices and standards on staffing, track inspection, and Positive Train Control

To shore up rail safety in states, the FRA should provide best practices for states and assess if stronger inspection techniques need to be put in place. Further, to minimize the potential for operator error, the FRA should work with policymakers, rail operators, and the Federal Communications Commission (FCC) to implement PTC, where possible, as soon as possible, even if regionally.

Staffing Levels & Track Inspection

- 6.1 FRA should offer guidance to states on updated staffing levels. The FRA has said it will use data-driven techniques to direct track inspections in response to increased oil trains. With changing practices, the FRA should provide to states in the State Safety Participation Program updated guidance on the number of rail safety inspectors needed to adequately perform inspections on all trackage within a state's boundaries.
- 6.2 FRA should also assess outcomes of voluntary measures from a January 16, 2014, "Call to Action" that asked rail operators to increase track inspections—beyond what is required by federal regulations—on routes with trains carrying 20 or more carloads of crude oil. Findings from this assessment should inform what, if any, inspection techniques need updating.

Positive Train Control

- 6.3 ODOT Rail Division will work with BNSF, UP, and P&W to identify when each railroad would be able to implement PTC in Oregon. The state recognizes that Congress *may* consider legislation to extend the deadline on implementation of PTC nationwide. Even so, ODOT Rail will inquire if these railroads will do early testing in Oregon and if it can be implemented regionally.

State agencies and policymakers must work to modernized ORSs and OARs to reflect new mix in commodities

To ensure best safety standards are in place in Oregon, statutes and administrative rules must be reviewed and updated.

- 7.1 ODOT Rail Division will update outdated rules. Specifically:
 - ORS 824.082 (2) should be revised to strengthen and clarify notification when hazardous materials shipments can be released to emergency responders and to the public
 - OAR 741-510 should be updated once the Rail Division, the railroads, and emergency responders conclude what is needed in the way of reporting requirements
- 7.2 Future updates of ORSs and OARs will be considered by relevant state agencies after the USDOT completes its current rulemaking on rail safety.
- 7.3 OSFM, through its SERC, must update outdated OARs to ensure they line up with recent emergency orders and consider additional changes once new federal regulations are in place.

Additional state funding needed for spill prevention, response, and staff recruitment, and retention

To ensure best response in the event of an incident, the state should raise adequate resources. The state must also take steps to recruit and maintain high caliber rail safety staff.

New Funding Ideas for Consideration - (Appendix - OSFM Current Funding Structure-2014)

- 8.1 The state of Oregon should consider developing a fee system for transporting crude oil and other hazardous materials by rail in the state. These funds would be dedicated to emergency response planning, equipment purchases, training, exercises, and medical services to ensure proper preparedness in the event of a rail emergency.
- Consider a barrel fee on crude oil arriving in Oregon by rail, or other similar fee tied to facilities in the state and allocated for oil spill prevention and preparation work.
 - Continue to look at examples of how other states fees are used for spills or for response drills and training.
 - Consider other uses of funding, such as hiring additional staff, offering salaries for recruitment and retention purposes in critical safety positions, or training emergency responders.
- 8.2 Policymakers should consider expanding its existing Oil Spill Control Fund, which can only be used for cleanup activities and rehabilitation of fish and wildlife, to include planning and preparedness activities. Fees could be used to support additional staff to manage the program.
- 8.3 Policymakers should consider establishing a per-fee charge on each tank car carrying any type of chemical.

Rail Safety Inspector Staffing Levels, Compensation and Retention

- 8.4 ODOT Rail Division will identify the appropriate number of inspectors and the appropriate corresponding compensation to ensure retention of these critical safety employees. FRA's pay is much higher, and it is therefore difficult for Oregon to retain qualified employees. Additionally, it takes up to one year to train individuals to perform as a federally-certified inspector.
- 8.5 ODOT Rail Division should no longer leave critical rail safety positions vacant.
- When there is a vacancy, critical positions should be filled as quickly as possible and not be left vacant for budgetary or other purposes. ODOT Rail Division Administrator must keep the ODOT Director apprised of vacancies in critical safety positions.
 - ODOT Rail Division should look to other states and the FRA for best practices on the recruitment and retention of staff involved in rail safety and make further recommendations for consideration by the Oregon Transportation Commission.

Emergency Responder Training

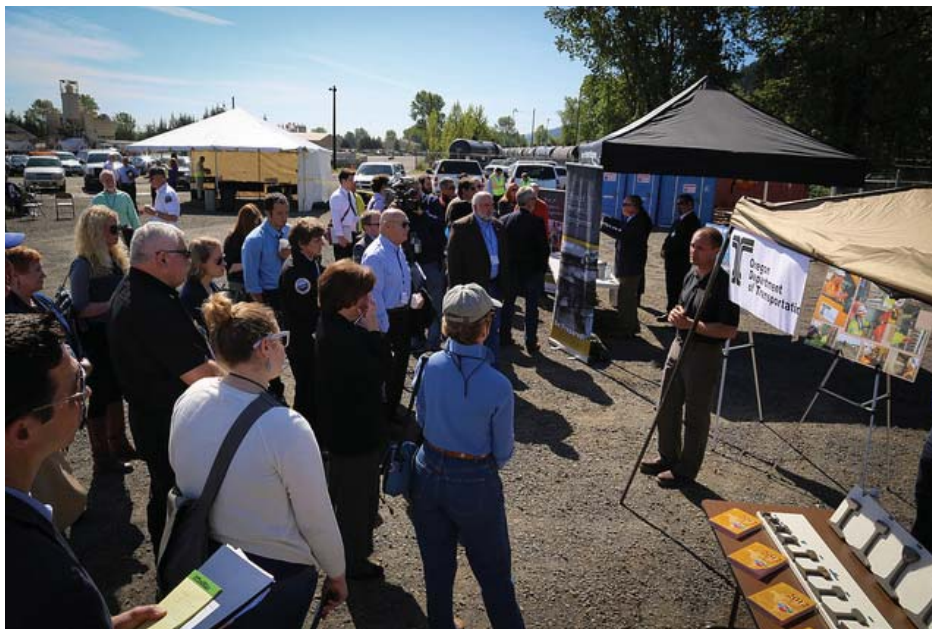
- 8.6 The Governor will call for additional funds for emergency responder training in the Governor's Recommended Budget for 2015-2017.

SECTION #4
State Activities To
Date

Field Briefing on Rail Safety

April 29, 2014, Linnton, Oregon

On April 29, 2014, the Office of Governor John Kitzhaber, in partnership with the Office of the Oregon State Fire Marshal, organized a briefing for state legislators, local government elected officials, congressional staff, and community members focused on rail safety issues surrounding oil trains in Oregon.¹⁵ The intent of the briefing was to provide time in the field for participants to learn about rail safety and response and mitigation in the case of a derailment.



The field briefing was designed to be interactive so attendees could access and see rail cars, emergency responders' equipment, and rail safety equipment. Subject matter experts staffed various booths, and participants went from booth to booth to learn about work performed by staff in their respective field.

Presenters at the field day included staff from the following entities:

Federal Government

Environmental Protection Agency
U.S. Coast Guard
Federal Railroad Administration

State of Oregon

Oregon State Fire Marshal
Oregon Department of Transportation Rail Division
Oregon Department of Environmental Quality
Office of Emergency Management

Railroads

Union Pacific
BNSF
Genesee & Wyoming

¹⁵ Knife River Corp. hosted the field day at their location in Linnton, OR.

Field Briefing on Rail Safety

April 29, 2014, Linnton, Oregon

Information Presented At Stations

The following information overview is reprinted with the permission of Patrick Brennan, administrator to the House Interim Committee on Transportation and Economic Development and the Senate Committee on Business and Transportation.¹⁶

BNSF Railway and Union Pacific Railroad

Representatives from BNSF and UP offered a quick review of valves, gaskets and other safety features of a typical oil tanker rail car, including relief valves that ensure that the tank does not explode due to positive pressure inside and relief valves that ensure that the tank does not implode due to negative pressure inside. The panelists noted that most devices are certified by the American Association of Railroads (AAR). Both of the Class I railroads in Oregon can deploy emergency equipment and personnel to respond to incidents on their lines; deployment can be by rail, by road, or by air using helicopters or airplanes. Response time varies by distance to the incident site, from 10 minutes to one hour. The panelists also displayed equipment used to skim oil from the surface of water and equipment used to fight fires and prevent flare-ups.

Oregon Emergency Management

Staff from OEM, including Director Dave Stuckey, provided an overview of public information notices, evacuation procedures, and incident command structure that would respond to an oil train crash, spill or fire. OEM provides support to local incident response and coordinates public information through the Oregon Emergency Response System (OERS); operates older-style emergency alerts through television, radio and other media; and utilizes triangulation to send text alerts to cell phone users via reverse 9-1-1. The panelists also noted that Oregon and Washington share assets for all sorts of incident response, and coordination also occurs at the local level (for example, between Multnomah County and Clark County, Washington). One issue on which work continues is improved agency access to train routes and manifests.

Oregon Department of Transportation

John Johnson, ODOT's Rail Safety Manager, and Matt Brewer of the Federal Rail Administration explained how inspections work for rail and equipment related to oil trains – including track safety, operating procedures, motive power and equipment, signal inspections and hazardous materials. Oregon and the FRA are partners to provide inspectors across all of the above disciplines, and FRA also trains local inspectors that report back to the federal agency. They described the types of things looked for during inspection of rail cars, including: pressure relief valves; top fitting protection; heat shields; steel tank; jacket and thermal protection; and bottom outlet handles. The two primary goals are to first prevent derailment, but if derailment occurs the goal changes to preventing a release of oil. Violations can result in civil penalties, and may be released to the public if adjudicated.

Inspection of Legacy and New Oil Tanker Rail Cars

Union Pacific representatives provided a side-by-side comparison of two generations of oil tanker cars, referred to as DOT-111. He indicated that about 75% of oil tanker cars in use are of the older classification; he also discussed some of the proposed improvements that would be incorporated into the next generation of tanker cars:

¹⁶ This information is reprinted from an email sent to legislators and staff on May 1, 2014.

Field Briefing on Rail Safety
April 29, 2014, Linnton, Oregon

	<u>Legacy Cars</u>	<u>Current Production Cars</u>	<u>Next Generation Cars</u>
Tank thickness	7/16"	1/2"	9/16"
Head shield	none	bottom half	full head shield
Fitting protection	minimal	robust	robust
Valves	standard	extended/high capacity	w/heat-induced pressure relief
Fire protection			jacket protection

The panel indicated that each car is fully inspected, top to bottom, every 10 years, and has an expected lifespan of 50 years; as a result, it will still be more than a decade before the legacy tanker cars are rotated out of use. Both the legacy and current production cars have a standard weight of 263,000 lbs, a maximum gross weight of 286,000 lbs (hence the typical reference to “286” cars), and have a carrying capacity of roughly 30,000 gallons. In response to a question, the panelist indicated that additional research is needed on what makes crude oil taken from the Bakken formation different from typical crude oil, but that railroads do not try to match up more ‘hazardous’ types of crude with newer rail cars.

Hazardous Materials

The final portion of the tour included interviews with representatives from several different response agencies and examination of the types of data and equipment these entities utilize as part of incident response.

NRC 24-hr Emergency Spill Response reviewed their response procedures for crude oil spills. They train regularly with railroads and with state government officials. Their services can be deployed on either land or water, and are based in Kalama, Port Westward, Rainier and Longview.

Oregon DEQ Emergency Operations discussed their procedures for cleanup during oil spill response situations, which are scalable depending on the size and scope of the spill. The agency mostly provides technical assistance to local officials during incident response, later assuming a command role during environmental cleanup operations. The agency’s focus is primarily on health and exposure, animal nesting grounds and environmental response. DEQ utilizes a geographic-specific, pre-planned set of responses based on its Incident Response Information System (IRIS), which includes 160+ layers of information.

U.S. Environmental Protection Agency Response and *United States Coast Guard Response* explained their varying responsibilities for spills on the Columbia River; the USCG is responsible for spill incidents between Astoria and the Bonneville Dam, while USEPA is responsible for spills occurring above Bonneville Dam.

Field Briefing on Rail Safety

April 29, 2014, Linnton, Oregon

Oregon Hazmat Emergency Response Teams (ERT) – there are 15 such teams, located throughout the state; the presenters were from the Portland region. They indicated that a major incident in the Portland metro area would also likely involve response from Multnomah County and Tualatin Valley. They indicated that team locations are based on both population and on response times.

Oregon Hazardous Materials Response Teams Conference

May 13-15, 2014, Seaside, Oregon

In May 2014, the Oregon Office of the State Fire Marshal hosted a three-day training for Oregon's emergency responders to give them an opportunity to learn from experts, and hear from national experts ([see Oregon Hazardous Materials Response Teams Conference – Agenda & Keynote Speakers](#)) on current techniques for hazmat response and preparedness. The workshops were designed to give emergency responders the necessary expertise to handle hazardous materials emergencies and to minimize the dangers associated with them. The conference provided a rare opportunity for not only different regional hazmat teams to network and work with each other, but also serve as a place for hazmat technicians to work with other government agencies, such as the 102nd Civil Support Team, and private industry.

Of the 139 people in attendance, 85 were hazmat technicians representing all 13 regional teams in Oregon. Other participants included local emergency managers, emergency responders that work along the A-Line in northwest Oregon, and staff from railroad operators in Oregon, ODOT, and DEQ. Funding for the conference came from PHMSA's Hazardous Materials Emergency Preparedness Grant and hazardous materials response vendors. In addition, ODOT and Portland & Western Railroad provided scholarships for emergency responders to attend the conference.

The training covered a myriad of topics that helped responders be better prepared to keep Oregon communities safe. Over the three days, attendees learned about decontamination considerations, classifying unknowns, as well as how to respond to mercury, alternative fuel, white powder, ammonia, pesticide, crude oil, and biological response operations. Attendees also heard from the U.S. Chemical Safety Investigation Board who shared details and lessons learned from several investigations that included noteworthy emergency and hazmat response.

The first day of the conference offered six different classes:

1. Decon Special Considerations
2. Responding to Mercury Emergencies
3. Crude Oil Response
4. Classifying Unknown Spills or Contents
5. Alternative Fuel Response Considerations
6. Hazmat Chemistry

Classes were taught by a variety of instructors, including Oregon HazMat technicians, EPA officials, and other hazardous materials experts from around the country. The Crude Oil Response class taught emergency responders about the properties of crude oil and how to handle a full-scale response in the event of a rupture or derailment. Other courses included information about alternative fuel response. Fuels discussed include biodiesel, CNG, Li-ion, hydrogen fuel cell, algae, wind energy, solar, and ethanol. Classes were designed to offer demonstrations, hands-on participation, educational strategies, and techniques.

Classes on the second day included the following:

1. Biological Response Operations
2. Advanced HazMat resource
3. It's More than Just a White Powder
4. Natural Gas Pipeline Emergencies
5. Railroads HazMat Response
6. Ammonia Response
7. Pesticide Emergencies

The Railroads HazMat Response class was taught by staff from BNSF who have been working in the field of Hazardous Materials Response for nearly 13 years, and covered techniques in responding to railroad HazMat incidents and crude oil response (types/hazards/transport). Emergency responders were able to have hands-on training using a UP trailer and a BNSF Training trailer that included Gauging Kit use, Capping Kits (Midland Kit, C-Kit Installation), and Valve/leak repair. Emergency responders were taught by a trainer who has worked with

Oregon Hazardous Materials Response Teams Conference

May 13-15, 2014, Seaside, Oregon

many different industries in varying capacities regarding hazmat and environmental response including railroads, highway transportation, petrochemical, maritime shipping, agricultural, pulp, and paper and high tech industries.

Federal & State Actions In 2014

As of the publication of this document

Timeline of Federal and State Actions

Federal Action		State Action
1/16/2014	<p>USDOT Secretary Foxx convenes a <u>meeting of railroads</u> and issues a “Call to Action” for operators to voluntarily take steps to improve the safety of the shipments of crude oil by train. Measures include:</p> <ul style="list-style-type: none"> o Increased track inspections—beyond what is required by federal regulations—on routes with trains carrying 20 or more carloads of crude oil; o Better braking technology allowing for faster stopping time and a decreased likelihood of pileup; o Traffic routing technology that uses the Rail Corridor Risk Management System to determine the safest and most secure routes for trains carrying 20 or more carloads of crude oil; o Lower speeds through designated urban areas for trains carrying at least one older DOT-111 car; and o Other steps including working with communities along crude oil rail transport routes, increased trackside safety technology, specialized training for local emergency responders, and emergency response capability planning.[x] 	
	<p>Governor Kitzhaber’s staff convenes a group of key state agencies to assess coordination of state resources and opportunities for increasing safety of transporting hazardous materials by rail in Oregon.</p>	2/12/2014
2/26/2014	<p>The U.S. House Transportation & Infrastructure Committee holds a <u>hearing on rail safety</u>, focusing on a range of issues including the safety of DOT-111 tank cars, timelines for update tank car regulations, status on the classification of Bakken crude, and operational issues.</p>	
	<p>Oregon Legislature adopts <u>House Joint Memorial 201</u>, urging Congress to enhance safety standards for new and existing tank rail cars used to transport crude oil and other flammable liquids.</p>	2/27/2014
3/6/2014	<p>The U.S. Senate Commerce Committee holds a <u>hearing on rail safety</u>. Senator Blumenthal, Chair of the Commerce Committee's surface transportation subcommittee, says he intends to introduce a rail bill later this year looking at both safety issues and attracting investment.</p>	
	<p>Governor Kitzhaber’s staff reconvenes state agencies to identify needs, including, at the state and local level:</p> <p>Improved reporting requirements for all rail operators (e.g., advance notice, quantities hauled and where transported); updated reporting requirements for emergency responders and general public on train manifests and determination of who will maintain the records; state staff turnover and pay; statute (ORS 824.082) update for consideration; Oregon Administrative Rules (OAR 741-510) update for consideration. Additionally, they discussed ensuring continued availability of proper training for local fire departments, continued training for State Hazardous Materials Response Teams; and proper equipment for emergency responders.</p>	3/6/2014

Federal & State Actions In 2014

As of the publication of this document

	On the national level, they discussed: resources to respond to a major incident coordinated with National Transportation Safety Board and railroads; training for responders to HazMat Operations level so they are prepared to deal with flammable liquids such as crude oil; and funding for formerly-funded Oregon Health Authority program to track emergency/unplanned releases of hazardous chemicals.	
	Governor Kitzhaber’s staff meets with representatives from the Confederated Tribes of the Umatilla Indian Reservation to discuss transporting crude oil by rail and provide an update to tribal leaders.	4/4/2014
	Governor Kitzhaber sends a letter to Oregon’s congressional delegation urging action on tank car safety design, implementation of Positive Train Control, accuracy of cargo information, training resources for emergency responders and asking for guidance for state agencies from the Federal Railroad Administration.	4/10/2014
4/22-4/23/2014	NTSB holds a <u>rail safety forum</u> that included panels on tank car design, rail operations and approaches to risk management, emergency response to tank car releases of crude oil and ethanol, and federal oversight of industry initiatives related to crude oil and ethanol.[xi]	
	ODOT Director Garrett clarifies agency policy in a letter to ODOT Rail Division administrator saying the division should “[i]mmediately direct the railroads to provide the information on their movement of hazardous materials in Oregon in 2013 that is required under ORS 824.082,” and to accelerate its efforts to “rewrite the administrative rules government the notification of transportation of hazardous materials (OAR 741-510-0020).” ^{lxxxvii}	4/23/2014
	Oregon legislators, local elected officials, tribal representatives and members of the public attend a half-day rail safety field briefing at the Linnton Depot rail yard, receiving hands-on training from emergency responders, railroad employees and state agencies about prevention, operation and response related to transporting hazardous materials by rail.	4/29/2014
	Global Partners <u>announces</u> the company will no longer accept shipments of crude oil in DOT-111 tank cars that do not meet CPC-1232 safety standards at its transloading facility at Port Westward in Clatskanie, Oregon.	4/29-4/30/2014
	Governor Kitzhaber sends a letter to U.S. Secretary of Transportation Anthony Foxx expressing concerns about rail safety and reiterating his requests for action described to Oregon’s congressional delegation on April 10.	5/2/2014
5/7/2014	USDOT Secretary Foxx issues an <u>Emergency Order</u> “requiring all railroads operating trains containing large amounts of Bakken crude oil to notify State Emergency Response Commissions (SERCs) about the operation of these trains through their states.”[xii] Effective on the date of its issuance, the order “requires that each railroad operating trains containing more than 1,000,000 gallons of Bakken crude oil, or approximately 35 tank cars, in a particular state to provide the SERC notification regarding the expected movement of such trains through the counties in that state.”[xiii]	
5/12/2014	USDOT Secretary Foxx wrote Gov. John Kitzhaber outlining his actions related to the May 7 th Emergency Order and Safety Advisory.	
	The Office of the Oregon State Fire Marshal hosts a three-day conference in Seaside, Oregon, for emergency responders across the state focused on	5/13-

Federal & State Actions In 2014

As of the publication of this document

	decontamination considerations, classifying unknowns, chemistry, railroad case studies, and Resource software; as well as response to mercury, alternative fuel, white powder, ammonia, pesticide, crude oil, and biological response operations.	5/15/2014
5/19/2014	The FCC entered into memorandums of understanding (MOU) with seven Class 1 railroads after resolving a conflict related to historic preservation that removes on of the impediments to the implementation of Positive Train Control (PTC).	
	After receiving final advice from the Oregon Department of Justice, the Office of the Oregon State Fire Marshal releases rail reports given to state from railroads carrying Bakken crude oil detailed in USDOT Secretary Foxx's May 7 th Emergency Order.	7/3-7/8/2014

SECTION #5
Railroad Items

Railroad Materials on Rail Safety

On May 9, 2014, Governor John Kitzhaber wrote the three railroad operators (see appendices for letters to BNSF, UP, and G&W) responsible for hauling the majority of crude oil through Oregon to ask about the status of available equipment caches and supplies they have to assist emergency responders in the event of a rail incident. In his letter he also asked, “[H]ow does your railroad work to remediate an event of this nature? Also, what work does your railroad do to prevent derailments in the first place? Finally, please articulate what work your railroad has done to assist in the training of emergency responders and communicate with communities on these and other related issues.” The following are the responses the state received in June and July of 2014.

The information requested by the Governor is essential if state and local entities are to ensure they have the right amount of staffing and resources to complement what is provided by the railroads in order to be able to respond to a rail incident involving crude oil.

Follow-up requests have been made to these rail operators to secure detailed information about caches of materials since receiving the following written responses.



Union Pacific Hazardous Materials Management Group

The Union Pacific Hazardous Materials Management Group (HMM) is made up of experts in hazardous material transportation safety, securement and response. The HMM team understands the risks associated with hazmat shipment by rail are a very real concern. We take our responsibility to ship hazmat, including crude oil and other commodities, very seriously. Providing safe and fuel efficient freight transportation is how Union Pacific is participating in America's energy evolution. We haul products related to the entire energy sector including wind, solar, coal, ethanol and crude oil. We take our responsibility to ship crude oil, as mandated by federal law, very seriously. Our goal is the same as our customers and the communities in which we operate, and that is to deliver every tank car safely while at the same time being prepared to respond in the case of an accident.

HMM is part of the Safety department at Union Pacific Railroad. The team's primary focus is the safety of all Union Pacific employees, the residents of communities where we operate trains and our customers. This team of experts has a four part mission:

Prevention - Prevent releases of hazardous materials in transportation

Preparedness - Develop internal and external assets for hazmat education, response and recovery

Response - Respond to incidents to protect health and minimize negative impact

Recovery – Restore normal operations as quickly as possible in the event of an incident

Prevention

Union Pacific's HMM team members regularly inspect tank cars moving on the Union Pacific network. In each inspection, an HMM team member examines fittings, markings, safety appliances, and waybills. Union Pacific's HMM managers annually perform thousands of these inspections. HMM conducts tank car inspection blitz programs throughout the year in which Union Pacific managers, outside contractors, Union Pacific customers and regulators work together to inspect a large number of tank cars in a defined geographic area. Beginning in 2013, high volume crude oil locations were chosen for tank car inspection blitz programs. Ten to 16 blitzes are performed annually across the Union Pacific network.

HMM is responsible for training Union Pacific employees about hazardous materials safety. All U.S. Department of Transportation-defined "hazmat employees" are required to be trained in the safe handling of hazardous materials. Union Pacific train crews are required to carry a copy of *Instructions for Handling Hazardous Materials*, while operating a train carrying hazmat. This is a reference guide published by HMM.

Railroad Materials on Rail Safety

Union Pacific



If Union Pacific inspections identify a shipper with recurring issues, HMM will provide onsite training for proper tank car securement to ensure the shipper is educated in best practices for preparing hazardous materials shipments.

Preparedness

Preparation is critical to an appropriate incident response. HMM develops the Union Pacific *Hazardous Materials Emergency Response Plan* (HMERP), a performance based plan that provides guidance to the individual reporting a release as well as a list of training requirements for those responding to an incident. Each of the 21 operating divisions at Union Pacific undergoes an annual unannounced drill to ensure all aspects of the HMERP are in place and being followed by Union Pacific employees. The requirements, including drills and exercises, for specific plans for large oil storage tanks (Oil Pollution Act 1990 (OPA 90)) are managed by HMM.

Providing no-cost training to public responders is Union Pacific's most substantial preparedness effort. Having cataloged every fire department that may respond to an incident along the Union Pacific network, HMM team members reach out to fire departments on an annual basis to offer training or information to assist fire departments in their preparation for a potential incident. Training consists of classroom and hands-on activities using a specially designed training trailer or training tank car. Trainees learn how to contact the railroad during an emergency, how to read shipping documentation, derailment safety considerations, and what assets the railroad can provide in the event of an incident. HMM performs large scale training events in collaboration with Union Pacific's partners in TransCAER (Transportation Community Awareness and Emergency Response).

Response

The response process used by HMM is designed to be easily incorporated into public response incident command structure. This process requires analyzing the problem, planning the response, implementing the plan and evaluating and adjusting the response as necessary. Union Pacific's Response Management Communication Center (RMCC) is an around the clock security response center where critical call dispatchers manage calls from the public, law enforcement and others who are reporting emergencies and other incidents on Union Pacific's 32,000-mile network. RMCC follows all regulations regarding notification and local, state and federal agencies in the event of an accident and works closely with emergency responders throughout an incident.

Union Pacific has 30 highly trained hazardous materials responders. We rely on a network of private response contractors who are carefully vetted and audited on an annual basis to ensure a constant state of readiness. Most of these contractors are highly qualified with fire fighting or United States Coast Guard Oil Spill Recovery Organization (OSRO) certifications. OSRO certified contractors have demonstrated expertise and equipment to handle oil spills on land and water. Contractors have access to the equipment (boats, boom, skimmers, vacuum trucks, storage tanks, heavy equipment) necessary to respond to a hazardous materials incident.

To supplement the response, HMM has air monitoring contractors who can be quickly deployed to provide real time data to public responders. Additionally, HMM can deploy contractors who are subject matter experts in toxicology, industrial hygiene, medicine, nursing and environmental protection. These

Railroad Materials on Rail Safety

Union Pacific



specialty contractors can work in the communities impacted by an incident and in concert with emergency responders to ensure a safe response.

HMM invested in response equipment in the form of firefighting trailers, foam caches, air monitoring equipment and specialty tools to ensure resources are readily available.

Recovery

Once an incident has been stabilized, recovery begins. If a tank car has been damaged and cannot travel safely on the railroad, the contents must be transferred to an undamaged car. Union Pacific is the only railroad that owns and operates all of the equipment necessary to transfer any liquid or compressed gas from one tank car to another. Once the tank car is liquid free, HMM will clean and purge the damaged car to ensure it can be safely repaired or dismantled.

Once all hazardous materials have been removed from the incident site, HMM will transition the project to the Union Pacific Site Remediation Group for remediation and closure with regulatory agencies.

The final aspects of recovery include a debriefing with the public responders and an internal post incident analysis. These activities are an invaluable means of improving the group's overall capability to respond to a hazmat-related incident.

ADDENDUM – sent July 20, 2014

Union Pacific relies on a network of private response contractors who are carefully vetted and audited on an annual basis to ensure a constant state of readiness. Our contractors have access to the equipment (boats, boom, skimmers, vacuum trucks, storage tanks, heavy equipment) necessary to respond to a hazardous materials incident. NRC Environmental, an Oil Spill Removal Organization (OSRO) contractor, is located in Portland, OR, Seattle, WA, Spokane, WA, and Pasco, WA. Clean Harbors, is located in Clackamas, OR.

In the unlikely event that a commodity is released from a rail car on Union Pacific property, we have access to more than 15,000 feet of containment boom in Portland, which we believe is an appropriate amount of boom for emergency response in the region. Through our proactive relationship with the Clean Rivers Cooperative, we also have access to an additional 50,000 feet of boom in Portland.

BNSF Railway: Crude by Rail Safety in Oregon

BNSF Footprint in Oregon

For more than a century, BNSF Railway has played an important role in Oregon's economy. Oregon is a part of the Great Northern Corridor, which spans from the Pacific Northwest to Chicago. BNSF helps to connect Oregon businesses to markets within the United States, Canada and around the world. In all, BNSF moves more than 320,000 carloads of freight in Oregon annually. Supporting BNSF's rail operations in Oregon are more than 360 dedicated employees who earn a combined payroll of more than \$250 million.

Rail Safety Overview

BNSF believes that every accident and injury is preventable. Operating free of accidents and injuries has long been part of BNSF's vision and our focus has been on preventing accidents in the first place. The rail industry as a whole is also very safe and has reduced employee injury rates, train accident rates, and grade crossing collision rates by 80 percent or more since 1980. BNSF experienced the fewest mainline derailments in its history in 2013, and the Federal Railroad Administration (FRA) says that preliminary data indicates it may have been the safest year for the rail industry as well, following 2012 which had been the safest year in history for both BNSF and the rail industry. We have made this remarkable safety progress in partnership with our employees and by continually investing in new technologies that help make the railroad safer and more efficient.

Prevention

BNSF has a broad-based, multi-level risk reduction program for all trains to reduce incident risk and ensure all commodities are handled safely and damage and incident-free. As part of BNSF's commitment to safety, we have always handled some commodities with extra precautions to further reduce risk.

Key Trains

For more than two decades BNSF and the rail industry have operated specially identified "Key Trains," which carry certain hazardous materials, with more restrictive operating procedures than required by federal regulation. Key Train operating procedures and practices are ingrained into BNSF's day-to-day operations, and include:

- Lower speed limits (40 mph unless further restricted by lower speed limits on the track)
- Stricter rules for trackside warning device notifications and emergency brake applications

On Aug. 2, 2013 the FRA issued an Emergency Order and Safety Advisory regarding the movements of flammable liquids, which includes crude oil and ethanol. As a result, BNSF and the rail industry have implemented a number of additional measures to reduce risk and, in some cases, provide an additional layer of review to reinforce existing safety rules. The FRA Emergency Order contained requirements that are effective within 30 days for unattended trains carrying hazardous material such as chlorine that is classified as Toxic by Inhalation (TIH) or 20 or more loads of certain flammable liquids like crude oil and ethanol. These trains will not be left unattended on main line or siding tracks. Narrow exemptions for specific locations and circumstances require a sufficient safety reason and a plan to be submitted that requires the lead locomotive doors to be locked or the operating control handle (reverser) removed once the train is secured. The crew responsible for securing the train must tell the dispatcher how many hand brakes have been applied and provide any other relevant information such as train tonnage, weather, and grade. This information must be recorded, verified, and confirmed with the train crew. We want to emphasize that ***BNSF considers these measures minimum standards***. BNSF will continue to look for opportunities for operational safeguards that go beyond these.

Railroad Industry Voluntary Efforts with U.S DOT

On Feb. 21, 2014, the nation's freight railroads, working with the United States Transportation Secretary Anthony Foxx, voluntarily agreed to a series of operational counter-measures that will further reduce risk in the movement of crude by rail. The railroad industry's voluntary agreement addresses key areas:

1. Rerouting analysis for crude trains
2. Lowering crude oil train speeds in large cities designated as High Threat Urban Areas
3. Formalizing enhanced braking processes
4. Increased track inspections on crude routes
5. Additional wayside equipment defect detectors on crude routes
6. Local emergency responder training and tuition assistance
7. Railroad emergency response systems
8. Community outreach

Track Inspections

BNSF inspects track and bridges more frequently than required by the FRA to ensure they are safe. Most key routes on BNSF are inspected up to four times per week, more than twice the inspection frequency required by the FRA, and our busiest main lines can be inspected daily. Track inspections on BNSF main lines occur by hy-rail vehicle. In addition to the normal hy-rail inspections, on-foot inspections of all turn-outs on the main lines and yard tracks are required at least monthly. Supervisors are also required to make regular train rides over their assigned territories. Track inspectors record track conditions and update data following each inspection. This information is provided to the FRA. BNSF employs track inspectors who are chartered by the FRA to comply with FRA regulations. For further details on FRA guidelines, visit the Track and Rail and Infrastructure Integrity Compliance Manual <http://www.fra.dot.gov/Page/P0051>.

Automated Track Inspections

BNSF has special detection technology along key routes on its network to monitor for early signs of potential problems that could cause premature equipment wear or failure. Detecting such defects early has helped improve safety and extend the service life of equipment.

- **Rail detectors:** BNSF's rail detectors use ultra-sonic rays to detect internal (and external) flaws in the rail. The frequency of inspections are determined by the tonnage moved over a given section of track, however, the main line routes across BNSF's system receive rail detector testing every 30 to 50 days on average.
- **Track geometry car:** BNSF's track geometry car measures major main line routes annually and up to three times a year depending on rail volume. The track geometry car is a specially-equipped passenger car that measures the tracks' surface under load for, gauge, cross-level, alignment and vertical acceleration. A computerized print out of the trackage indicates where the measured flaws exist in the track. This information is immediately communicated to field personnel to ensure that the defects are addressed.

Freight Car Defect Technology

BNSF has special detection technology along key routes on its network to monitor for early signs of potential problems that could cause premature equipment wear or failure. Detecting such defects early has helped improve safety and extend the service life of equipment.

- **Wheel Impact Load Detector** - Measures forces applied to the rail to evaluate wheel surface defects. Decreasing the number of high impact wheels can help prevent derailments and also extend the useful life of rail.
- **Warm Bearing Detection System** - Monitors for excess heat coming from wheel bearings. Identifying internal bearing defects early prevents potential derailments and helps to extend wheel life.
- **Hot / Cold Wheel Detector & Technology Drive Train Inspection** - Measures wheel tread temperature to identify sticking or inoperative brakes; and applied handbrakes.

- **Acoustic Bearing Detector** - Utilizes a microphone array to evaluate and identify internal journal bearing flaws.
- **Machine Vision System** - Utilizes a camera system to evaluate and identify component wear or damage of wheels, brakes, draft gear and truck components. The early warning this technology provides enables BNSF to repair trucks before safety issues occur and can extend the life of wheels.
- **Truck Performance Detector** - Measures forces applied to the rail to evaluate each truck's ride performance. Early warning of truck performance issues enable BNSF to perform repairs before safety issues occur and extends the life of the equipment.

Weather and Earthquake Inspection Programs

Special inspections are required during extremely hot and cold weather conditions, storms, high water periods, and after earthquakes. When a significant earthquake is reported, BNSF inspects track based on the magnitude and epicenter location of the earthquake. BNSF's policy requires track to be inspected if the earthquake is measured at 5.5 magnitude or higher on the Richter scale. The required inspection radius is determined by the location of the epicenter.

Bridge Inspections

Inspections of all bridge structures are performed a minimum of twice per year and are utilized to identify required maintenance and to ensure there are no structural exceptions. One of those inspections is also performed with the presence of a supervisor. BNSF's bridge inspectors and engineering staff are also supported by consultants and contractors in our efforts to inspect and maintain BNSF bridges. The key to the longevity of any structure is proper maintenance and repair. And railroads, such as BNSF, spend a higher percentage of revenue maintaining, replacing, and expanding its infrastructure than any other industry. For example, in 2013, BNSF had **54,332 documented inspections** on **12,996 active bridges**.

Tank Cars

BNSF does not currently own the tank cars used to transport hazardous materials and crude oil for rail customers. They are owned by the customers directly or by leasing companies. The most significant growth in crude oil volumes shipped by rail has occurred in the last few years. All tank cars ordered since October of 2011 have been built to the new tougher tank car standards which include:

- Thicker, puncture-resistant steel shells
- Extra protective head shields at both ends of the tank car
- Additional protection for the top fittings
- Higher flow capacity pressure release valves

On Feb. 20, 2014, BNSF issued a request (RFP) to major railcar manufacturers to submit bids for the construction of 5,000 Next Generation Tank Cars to be used for transporting crude oil. The tank car RFP represents an important milestone in the improvement of safety standards for the transportation of crude by rail. The tank cars are to be built to exceed the stronger new standards the industry voluntarily adopted in October 2011 for the CPC-1232 jacketed tank car and will add the following new safety requirements:

- The tank car body shell and head ends must be built of 9/16 inch thick steel
- Equipped with 11 gauge steel jackets and full-height, 1/2 inch thick head shields
- A thermal protection system which incorporates ceramic thermal blanketing and an appropriately sized pressure relief device capable of surviving an ethanol-based pool fire
- A bottom outlet valve handle that can be disengaged to prevent unintentional opening

The BNSF tank car RFP represents a significant voluntary commitment that may help accelerate the transition to the Next Generation Tank Car and provide tank car builders a head start on tank car design and production, even as the Department of Transportation, railroads and shippers continue to engage in the formal rulemaking process. BNSF believes that the RFP process will provide market participants more certainty, sooner.

Positive Train Control (PTC)

PTC is advanced technology designed to automatically stop or slow a train before certain accidents occur. In particular, PTC is designed to prevent train-to-train collisions, derailments caused by excessive speed and unauthorized movement of trains onto sections of track where repairs are being made or as a result of a misaligned track switch. BNSF will install PTC on our primary crude routes.

Locomotive Event Recorder Automated Download

The locomotive event recorder, similar to the “black box” in an airplane, is automatically downloaded when a train arrives at a terminal. Each record of a trip is screened by a computer program and or a supervisor looking for rules violations including excessive speed, crossing grade signaling and unsafe braking.

Response

While we have made significant progress in reducing the likelihood of a hazmat incident in any community, we also want to ensure BNSF and the communities we serve can be prepared to respond if an incident were to occur.

Emergency Response, Training and Equipment

BNSF provides free railroad hazmat response training to 3,500 to 4,000 local emergency responders a year in communities across our network, and has provided training to more than 65,000 emergency responders since 1996. In 2013, we participated in 20 training sessions for responders in Oregon and Washington, training more than 900 people.

BNSF has specialized equipment and hazmat responders staged across its network to deal with hazmat and crude oil incidents, including for firefighting and spill cleanup. BNSF has more than 200 trained hazmat responders at 60 locations on our network who are supported by a network of contract emergency and environmental responders. BNSF has a geographic information system (GIS) for emergency incidents that enables BNSF to quickly identify and contact the local emergency responders closest to any incident on our network.

BNSF was the first railroad in the industry to deploy a fleet of industrial fire-fighting foam trailers on hazmat routes around its network. The trailers produce alcohol-resistant foam to extinguish fires involving materials such as ethanol and crude oil by covering the spilled material and depriving it of oxygen. BNSF also makes the trailers available to other railroads and communities. BNSF has additional specialized spill response equipment and hazmat responders staged across our network, locally these resources are in several locations in Oregon such as Portland, Eugene, Klamath Falls, Maupin, Moody and Prineville.

BNSF has developed and shared geographic response plans (GRPs) with state and local emergency response organizations in many areas and has also provided a computer-based emergency response training program on hazardous materials to every fire department within two miles of our rail lines.

How to Find Out About Hazardous Materials Being Shipped Through Your Community

BNSF provides hazardous material traffic flow reports upon request to:

- Local emergency responders.
- Elected officials
- Emergency management officials.

Officials requesting the information are asked to agree to use the information solely for emergency response planning purposes and not to make the information public for security reasons. This information is provided on a confidential basis. BNSF is in compliance with the U.S. Department of Transportation order to share information with the Oregon SERC. Hazmat traffic flow information can be requested via <http://www.bnsf.com/communities/bnsf-and-the-environment/hazardous-materials-info-request/>.

Responding to a Rail Incident

In the event of an incident in Oregon, below is the sequence of events that would occur:

- BNSF crews operating the train would provide their paper work to the emergency responders. This paperwork, also called the “Trainlist” provides the sequence in the train and detailed hazardous materials information. The crew would also help explain the paperwork to the emergency responders and point out the location of any hazardous materials in the train.
- The BNSF Hazmat team would contact area emergency dispatchers to obtain on-site fire/police contacts.
- Then, the BNSF Hazmat team would contact the on-site responders to answer any questions and provide resources being mobilized to the site and ETAs.
 - BNSF Hazmat Responders from would be mobilized;
 - BNSF Hazmat Contractors from the nearest location to the incident would be mobilized;
 - Specialized Air Monitoring Equipment/Personnel would be mobilized from the nearest Tactical Toxicology Kit location (Pasco, Wash., or Portland, Ore.) and from the inventory of contractor owned air monitoring equipment to provide real time air monitoring to help identify any on-site and off-site impacts;
 1. Depending in the scale of the response the BNSF Hazmat Strike Team would be mobilized from Vancouver, Wash., Fort Worth, Texas, San Bernardino, Calif., and/or Minneapolis, Minn., using private aircraft;
 2. Depending on the scale and scope of the incident(s), additional contracted resources would be mobilized across the state, the region and throughout the nation.
 - BNSF responding personnel and contractors would work within an established Unified Command structure on-site.
 1. The most senior operating officer from BNSF will be the Incident Commander for BNSF within the organization to direct all railroad resources in coordination with the responding agencies.
 2. BNSF will mobilize and provide resources necessary to help mitigate the incident.

Remediation

BNSF is responsible for the mitigation of any incidents and any restoration tasks. BNSF contracts with pre-approved consultants and contractors to perform the remediation and restoration. State and local agencies oversee the work and BNSF must obtain their concurrence before a site is acceptably closed.

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Railroad Materials on Rail Safety

Genessee & Wyoming Inc. (parent company of Portland & Western)



June,9 2014

Dear Mr. Gard:

This is in response to a letter dated May 9, 2014 signed by Governor John A. Kitzhaber. It is in regards to the process and available resources that the State of Oregon has in the event of a derailment involving hazardous materials. Below is an outline to the questions that were asked with references to some of the information needed. If you have any additional question or requests, please feel free to e-mail or call me.

1) What is the available equipment to use to help emergency responders?

- We currently use NRC emergency response and have access to all of their current resources.
 - I. Including access to foam trailers in strategic locations that give us reasonable response times to an incident.
 - II. Including land and water response equipment placed strategically along the corridor.
- We use Rick Franklin Corp for re-railing with all their resources
- We use Hulcher services and their resources.
- In addition we have in- house re-railing crews and equipment.

2) How does our railroad remediate an event of this nature?

- We currently follow the guidelines of the PNWR ERP as outlined in our letter sent to the SERC coordinator dated June 5, 2014. (In accordance to DOT docket number DOT-OST-2014-0067)

3) What does our railroad do to prevent derailments in the first place?

- We have reduced the speed of all key trains to a maximum 25 MPH and to 10 mph in designated areas.
- We hi-rail in front of each loaded crude oil train.
- A qualified Mechanical inspector inspects every outbound train at Port Westward.
- We have increased rail detector inspections to twice a year from once a year.
- We comply with Emergency Order 28 which includes additional safety /security requirements.

4) What work has been done to assist in first responder training?

Railroad Materials on Rail Safety

Genessee & Wyoming Inc. (parent company of Portland & Western)



- March 17, Crag Ashenfelter and Brad Landers met at St. Helens with all of the local fire chiefs and reviewed the PNWR ERP.
- We worked with state agencies to assist with the Crude oil field day on April 29,2014.
- We worked jointly with the State Fire Marshal's office to provide eight scholarships to local responders to attend the 2014 Oregon Hazardous Materials Response Team Conference .
- We have made arrangements to conduct joint training with both the Union Pacific and BNSF Hazardous Materials officers and NRC environmental to help our local responders by the end of 2014.
- We have attended several CEPA meeting to show our support for the area.
- On June 17 , we attended a table top exercise jointly with the Columbia County fire, Columbia Bio Refinery ,NRC environmental , Port of St. Helens and the PNWR .

5) How do we supply fire chiefs with accurate and timely manifest?

- In the event of an incident, we currently supply local responders with shipping manifest papers on request . This can be done by electronic transmission and or in person.

6) How do emergency responders access or receive cargo information?

- We currently are sending in the Hazardous Materials movements to the state of Oregon and to the local responders in the communities through which the materials will travel. We will do this on an annual basis as required by ODOT. Responders can also request information at the discretion of the Railroad at any time.

Regards

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