OREGON
OFFICE OF STATE FIRE MARSHAL

2016 Annual Report on HB 3225

Prepared for the 2017
Oregon State Legislative Assembly
February 1, 2017

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Executive Summary

Governor Kate Brown signed HB 3225 into law on July 20, 2015, making it part of Oregon Revised Statute 453.307 to 453.414 relating to the safe transport of hazardous materials (Hazmat). The law provides for the Office of State Fire Marshal (OSFM) to coordinate training, preparedness, and response planning activities with a specific focus on oil or hazardous materials spills or releases that occur during rail transport. In part, this law mandates the OSFM to adopt by rule, a plan for the coordinated response to oil or hazardous material spills or releases that occur during rail transport, and to coordinate training for emergency responders.

Rule Making

- HB 3225 rules became effective as Division 120 OAR 837-120-0501 through -0540 on February 1st, 2017.

Emergency Planning

- The OSFM partnered with ODOT Rail and Public Transit Division to post information on GovSpace that details the types and quantities of hazardous materials transported by rail on a quarterly basis. GovSpace is a secure web-based information sharing platform accessible by emergency responders.
- As mandated by the U.S. DOT Emergency Order Docket No. DOT-OST-2014-0067, rail carriers transporting in excess of 1,000,000 gallons of Bakken crude oil are required to notify the Oregon State Emergency Response Commission (SERC).
- In September 2016, the Columbia County Local Emergency Planning Committee (LEPC), finalized a Hazmat Transportation by Rail Incident Plan that was funded by Hazardous Materials Emergency Preparedness (HMEP) funds and guided through regular involvement and input from OSFM staff.
- The OSFM is actively promoting the use the AskRail mobile application to Oregon's network of emergency officials, responders, and planners to increase its use.

Equipment and Inventory

- The OSFM worked directly with Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) to supply eight foam firefighting trailers that have been strategically deployed throughout Oregon along mainline track where crude oil by rail is predominately shipped.
- As HB 3225 seeks an inventory of all emergency response resources available, the OSFM uploaded many of these assets into the Western Regional Resource List (WRRL).
- The OSFM has secured the donation of two retired rail tank cars, HB 3225 is funding their placement at training facilities in Oregon.
- Oregon's network of 13 regional hazmat response teams stand ready to respond to hazmat rail transportation emergencies and have completed specialized training funded through HB 3225.

Training

- In 2016, the OSFM facilitated the delivery of 2,544 personnel training hours on hazmat rail incident response to firefighters, hazmat teams, emergency planners, and other hazmat rail responders.

Hazmat Rail Incidents

A number of notable hazmat rail incidents occurred in 2016 and January 2017 that highlight the need to continue the planning, training, and response coordination efforts outlined in HB 3225:

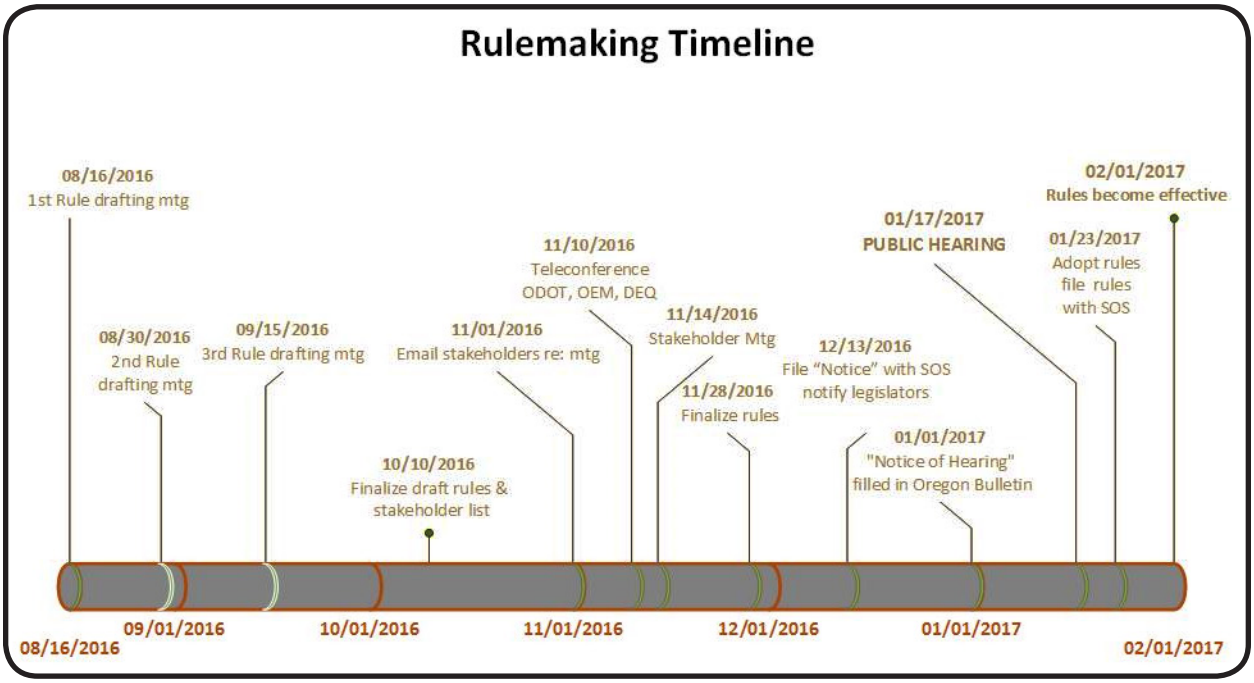
- **Mosier Crude Unit Train Derailment and Subsequent Fire**
  - On June 3, 2016, a unit train consisting of 94 rail tank cars containing Bakken crude oil experienced a partial derailment in the town of Mosier, Oregon.
  - A total of 16 tank cars derailed, resulting in a release of crude oil with subsequent fire.
  - The fire began with one car and spread to an additional two cars.
  - The fire also spread to nearby vegetation causing a small wildland fire.
- **Eugene Liquefied Petroleum Gas (LPG) Train Derailment**
  - On September 26, 2016, a freight train passing through a Union Pacific railyard in Eugene suffered a partial derailment, including a single tank car carrying LPG, 10 empty rail cars, and two grain cars; no leaking LPG was found.
- **Train Struck by Boulder While Traveling Alongside Deschutes River**
  - On December 27, 2016, a freight train consisting of three locomotives pulling 72 cars was traveling northbound on rail lines that parallel the Deschutes River in north Wasco County.
  - A boulder struck one of the locomotive's fuel tanks releasing 35 gallons of diesel from the 1500 gallon tank.
  - Contamination impacted only the ballast track bed and was mitigated by environmental clean-up contractors.
  - This particular stretch of rail line is only accessible by rail and runs next to the Deschutes River.
- **Train Derailment over an Embankment in Umatilla Co.**
  - On January 9, 2017, a freight train traveling through Umatilla County suffered a partial derailment involving 12 railcars, some of which were transporting hazardous substances; however, none of the containers released any hazardous materials.

Moving Forward

- The OSFM is committed to additional emergency planning efforts, training, inter-agency coordination, and simulation exercises.
- As identified through the Mosier after-action reviews and regional planning efforts, additional focus needs to be placed on ensuring that local, state, federal, tribal, and private rail emergency plans integrate effectively.
- The OSFM strongly recommends the execution of a full-scale exercise that focuses on a derailment and release of hazardous materials.
- Oregon's collective success will be through the cooperation of all local, state, federal, tribal, and private agencies maintaining a high level of accountability in preparing for future incidents.

Rule Making

HB 3225 mandates the Oregon Office of State Fire Marshal (OSFM) adopt rules for its implementation. Draft rules were developed and refined from August through October 2016 and were presented at a stakeholder's meeting in November 2016. Several stakeholders were represented and many others invited, including Oregon Department of Environmental Quality (DEQ), Oregon Department of Transportation (ODOT), local and state emergency management, the Oregon Fire Chiefs Association (OFCA), the rail industry, and Oregon tribes. Feedback and insight from these stakeholders guided the updated draft rules filed with the Secretary of State in December 2016. A public hearing was held in January 2017 prior to the rules becoming effective as Division 120 OAR 837-120-0501 through -0540 on February 1st, 2017.



Emergency Planning

A key element of HB 3225 requires the OSFM to coordinate response planning activities with a specific focus on oil or hazardous material spills or releases that occur during rail transport.

The OSFM partnered with ODOT Rail and Public Transit Division to post information on GovSpace that details the types and quantities of hazardous materials transported by rail on a quarterly basis. GovSpace is a secure web-based information sharing platform accessible by emergency responders. A vetting process is used to verify credentials and ensure the safety of the information. Emergency responders including fire chiefs, hazardous materials team leaders, and local emergency planners use this secured information sharing tool to drive decisions on planning, staffing, training, and equipment needs. The OSFM works closely with the Oregon fire service to promote this source of critical information.

As mandated by the U.S. DOT Emergency Order Docket No. DOT-OST-2014-0067, rail carriers transporting in excess of 1,000,000 gallons of Bakken crude oil are required to notify the Oregon State Emergency Response Commission (SERC):

- A reasonable estimate of the number of trains transporting Bakken crude oil that are expected to travel, per week, through each Oregon county.
- Identify and describe the petroleum crude oil expected to be transported.
- Provision of all applicable emergency response information.
- Identification of the routes over which the material will be transported.
- If no changes are expected from previously submitted report, no new reports are required.

Oregon Revised Statute 453.520 designates the State Fire Marshal as the SERC and thus the OSFM processes and distributes these notifications. Rail carriers provide updates to the SERC anytime there is an increase in Bakken crude oil transport by 25%. The OSFM makes these notices available to the public on its website. The most recent update was provided by Burlington Northern Santa Fe on October 31, 2016.

Oregon's SERC is also responsible for establishing local emergency planning committees (LEPC) and for administering the U.S. DOT's hazardous material emergency preparedness (HMEP) grant funding. In September 2016, the Columbia County LEPC finalized a Hazmat Transportation by Rail Incident Plan that was funded by HMEP funds and guided through regular involvement and input from OSFM staff. This local emergency response plan provides a playbook for local responders to make critical decisions, take action, and initiate essential notifications in the early phase of a hazmat rail emergency. The SERC is currently engaging other LEPCs in Oregon to move towards the development of local hazmat transportation by rail incident response plans with funding support through HB 3225 and HMEP funds or grants.

The OSFM is actively promoting the use of the **AskRail** mobile application to Oregon's network of emergency officials, responders, and planners. **AskRail** is a free decision-making tool available as an application on mobile devices created on behalf of the rail industry. This resource gives first responders immediate access to timely data regarding whether a rail car is loaded or empty, the type of hazmat a rail car contains,

the appropriate reference page in the Emergency Response Guidebook, and an ability to view the rest of the train's contents.

Equipment and Inventory

Another element of HB 3225 is for the OSFM to identify where hazmat response materials are located. A critical response gap noted in the 2014 survey of Oregon's fire service was a lack of equipment in which to fight a crude oil fire. The OSFM worked directly with Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) to close that gap. These rail companies supplied eight foam firefighting trailers complete with a cache of foam, pumps, and spray nozzles.

These trailers have been strategically deployed throughout Oregon along mainline track where crude oil by rail is predominately shipped. In addition, these trailers are available not only for a crude oil by rail incident, but for any type of fire requiring large quantities of foam application for suppression purposes. They are available to respond at a moment's notice and housed with the following fire agencies:

- Eugene/Springfield Fire Department (co-located with OSFM Hazmat Team #2)
- Gresham Fire and Emergency Services (co-located with OSFM Hazmat Team #3)
- Klamath County Fire District #1 (co-located with OSFM Hazmat Team #4)
- Ontario Fire Department (co-located with OSFM Hazmat Team #14)
- Portland Fire and Rescue Bureau (co-located with OSFM Hazmat Team #7)
- Salem Fire Department (co-located with OSFM Hazmat Team #13)
- Pendleton Fire Department and Ambulance Service
- Redmond Fire and Rescue

In addition to the capabilities these trailers provide, Oregon's network of 13 regional hazmat response teams stand ready to respond to hazmat rail transportation emergencies. These teams are equipped with specialized training, detection and chemical identification tools, personal protective equipment, and spill containment resources. HB 3225 also requires an inventory of all emergency response resources available. The OSFM has uploaded many of these assets into the Western Regional Resource List (WRRL). Federal, state, local, and private oil spill response organizations in the Pacific

Northwest all participate in this web-based database which allows oil spill preparedness planners and responders to:

- Use a system for describing, cataloging, ordering, and tracking oil spill response equipment.
- Display data to develop and review oil spill contingency plans.
- Evaluate spill readiness drills (including lessons learned) and improve responses.
- Describe a uniform method for ordering equipment from multiple sources during spills.
- Keep accurate cost accounting information during responses.
- Plan effective equipment demobilization after spill incidents.

The OSFM has secured the donation of two retired rail tank cars and is funding their placement at training facilities in Oregon. In spring 2017, empty rail cars will be placed at the Department of Public Safety Standards and Training in Salem and at the Emergency Services Training Center in Eugene. These training props will allow emergency responders hands-on training to practice hazmat identification, damage assessment, and firefighting techniques. The OSFM anticipates the availability of additional cars in the future and will continue to place them at available training sites.

Training

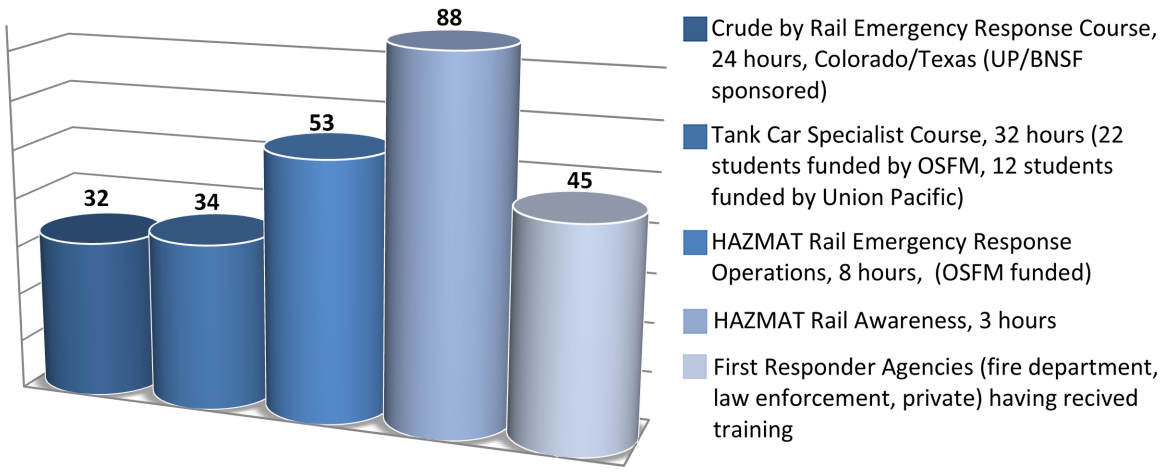
Through the adminstrative rules newly adopted on February 1st, 2017, HB 3225 directs the OSFM to provide support for delivering training and conducting exercises focusing on response to crude oil and hazmat transportation by rail incidents.

In 2016, the OSFM facilitated the delivery of 2,544 personnel training hours on hazmat rail incident response to firefighters, hazmat teams, emergency planners, and other hazmat rail responders. Additional courses are being planned and scheduled throughout 2017.

In response to best practices developed from after-action reviews of similar rail incidents, training programs have been identified that would further prepare emergency officials, responders, and planners for a future incident. While some training and exercises will involve multi-agency coordination, a few trainings can be hosted and offered directly by the OSFM. These include:

- **Hazmat-Focused Training**
  (Awareness, Operations, and Technician-Level)
- **Incident Command System Training**
- **Tabletop Exercises to Test Plans and Identify Gaps**
- **Full-scale Exercises to Simulate hazmat rail emergencies**

2016 First Responder HAZMAT Rail Training Attendance



Hazmat-Focused Training

Leveraging the specialized knowledge and training of Oregon's regional hazmat response teams, the OSFM is able to coordinate and host several courses, many of them taught by hazmat team members. These courses adapt core response principles to the transportation by rail environment and are primarily designed for emergency response personnel.

Hazmat-Focused courses to be coordinated and hosted by the OSFM

Hazmat Rail Emergency Response Awareness (3 hrs.)
This 3-hour course is designed to provide emergency responders the basic knowledge and awareness level training in response to a hazmat by rail incident.

Hazmat Rail Emergency Response Operations (8 hrs.)
This 8-hour course is designed to provide emergency responders the basic knowledge and operations level training in response to a hazmat by rail incident.

Hazmat Tank Car Specialist (40 hrs.)
This 40-hour course provides technical knowledge pertaining to tank cars, including damage assessment, oversight for product removal, and movement of damaged tank and other rail cars. Training covers site assessments of incidents, damage assessments of the containers, and product removal using different transfer techniques on the various DOT containers used in rail transportation.

Hazmat Incident Commander (16 hrs.)
This 16-hour program meets OSHA and NFPA standards to qualify incident commanders to manage hazardous materials incidents. The intent of these standards are to provide an incident command system that is headed up by a single person who does not necessarily have extensive knowledge about the classification and verification of hazardous materials, but rather who is able to manage emergencies of differing severity, as well as oversee the rest of the hazmat team.

Incident Command System Training

Leveraging the specialized knowledge and training of Oregon's all-hazards incident management teams (IMT), the OSFM is able to coordinate and host several incident command system (ICS) courses, many of them taught by IMT members. These courses offer an opportunity for our partner agencies to train their staff in core ICS principles, preparing them to integrate their agency's mission and objectives into an active hazmat transportation by rail incident. These courses will adapt core ICS principles to the hazmat transportation by rail environment and are primarily designed for those functioning as an agency representative, liaison, or public information officer.

ICS courses to be coordinated and hosted by the OSFM

ICS 402 ICS Overview for Executives/Senior Officials (4 hrs.)
The purpose of this 4-hour course is to provide an orientation of the Incident Command System (ICS) for executives and senior officials (including elected officials, city/county managers, agency administrators, etc.) along with understanding ICS principles and the executive/senior official role in supporting incident management.

All-Hazards Position Specific Public Information Officer (PIO) (16 hrs.)
This 16-hour course will help participants develop a strong set of core PIO skills and the ability to apply them within the context of an Incident Command System. This course concentrates training on the fundamental duties and responsibilities of the PIO in an all-hazards environment.

All-Hazards Position Specific Liaison Officer (LOFR — 16 hrs.)
This 16-hour course is designed to provide state, tribal and local-level emergency management and response personnel with a robust understanding of the duties, responsibilities, and capabilities of an effective liaison officer on or assisting an all-hazards incident management team.

Tabletop Exercises

Tabletop exercises are intended to provide an opportunity for state, county, and local entities to test their plans and capabilities to respond to hazmat transportation by rail incidents. These exercises identify coordination issues that could arise during an incident. These exercises will involve key personnel discussing simulated scenarios in an informal setting. These tabletops simplify and sequence the events during a period of time that, in reality, would be characterized by a series of complex issues occurring nearly simultaneously. All incidents are presented as unfolding events with the initial incident scenario introducing the emergency and new information being introduced by means of injected messages throughout the exercise. The scenarios and injects presented in this exercise are not intended to reflect a jurisdiction's political context, but the participants should consider how political issues might influence their actions and decisions.

Response Coordination and Lessons Learned

Mosier Crude Unit Train Derailment and Subsequent Fire

On June 3, 2016, a unit train consisting of 94 rail tank cars containing Bakken crude oil experienced a partial derailment in the town of Mosier, Oregon. A total of 16 tank cars derailed, resulting in a release of crude oil with subsequent fire. The fire began with one car and spread to an additional two cars. The fire also spread to nearby vegetation causing a small wildland fire. The incident, which impacted the City of Mosier, required the combined efforts of local, tribal, state, federal, and private sector response resources, under a unified command to manage the incident.

Once notified by the Oregon Emergency Response System (OERS), the OSFM dispatched the State Fire Marshal and its hazmat rail coordinator to the scene. The State Fire Marshal served as an agency representative and provided expertise to the unified command, while the hazmat Rail Coordinator assisted as a liaison officer.

The Oregon Office of Emergency Management (OEM) coordinated a state-level after-action review to identify success and areas of improvement in the coordinated response to Mosier. A detailed report is available from OEM; however, it is important to highlight some areas of improvement that the OSFM will be addressing through planning, training, and response coordination efforts:

- The early request for, and deployment, of a state incident management team (IMT) could assist the incident command organization in coordinating key elements of the interagency response.
- As part of the OSFM IMT, the OSFM Communications Unit could have provided complete, self-sufficient radio communications for all aspects of the incident to maintain safety and accountability.
  - The Communications Unit comes with radio caches, repeaters, satellite internet, and trained radio technicians.
- Improved understanding of the OSFM IMT request process and capabilities from locals, in addition to other state agencies.
- Liaison positions within the unified command were not adequately staffed during the response phase leading to inadequate communication between incident command, Oregon elected officials, and agency leaders.
- Some state agencies did not have adequate access to situational intelligence in order to operate within a common operating picture framework. Additional training on ICS and an increased understanding of unified command is necessary. Intelligence could have been obtained by state agencies by providing liaison officers or agency representatives during the early phases of the incident.

Eugene Liquefied Petroleum Gas (LPG) Train Derailment

On September 26, 2016, a freight train passing through a Union Pacific railyard in Eugene suffered a partial derailment, including a single tank car carrying LPG, 10 empty

rail cars, and two grain cars. Emergency responders closed local roads and ordered an evacuation of the surrounding neighborhoods. Eugene/Springfield Hazmat Team #2 conducted a damage assessment and determined no LPG had leaked.

This incident highlights the need for the OSFM's Hazmat Rail Coordinator, Hazmat Teams Program Coordinator, and SERC to:

- Work with OEM to initiate a coordinated call through the OERS council for significant hazmat by rail incidents.
- Engage the Lane County LEPC in developing, adopting, and regularly testing a hazmat transportation by rail incident plan.
- Coordinate the delivery of specialized training for fire departments and Oregon's regional hazmat teams on responding to tank car emergencies.
- Continue to strengthen hazmat team capabilities to respond to oil and hazardous materials spills or releases that occur during rail transport.

Train Struck by Boulder While Traveling Alongside Deschutes River

On December 27, 2016, a freight train consisting of three locomotives pulling 72 cars was traveling northbound on rail lines that parallel the Deschutes River in north Wasco County. A boulder struck one of the locomotive's fuel tanks releasing 35 gallons of diesel from the 1500 gallon tank. Contamination impacted only the ballast track bed and was mitigated by environmental clean-up contractors.

This particular stretch of rail line is only accessible by rail and runs next to the Deschutes River. The incident highlights the need for the OSFM's Hazmat Rail Coordinator and the SERC to:

- Build a local emergency planning committee (LEPC) in Wasco County that develops, adopts, and regularly tests a hazmat transportation by rail incident plan.
- Assist DEQ and the rail industry in developing geographic response plans (GRPs) that build capacity for and manage environmental consequences.
- Collaborate on a statewide coordinated response plan to oil and hazardous materials spills or releases that occur during rail transport.

Train Derailment Over an Embankment in Umatilla County

On January 9, 2017, a freight train traveling through Umatilla County suffered a partial derailment involving 12 railcars, some of which were transporting hazardous substances. None of the containers released any hazardous material.

Unless a local incident commander initiates a request through the OSFM's duty officer or Agency Operations Center, the OSFM relies on notifications from OERS that a hazmat transportation by rail incident has occurred. In this case, the OSFM was not notified by OERS.

This incident highlights the need for the OSFM Hazmat Rail Coordinator, Emergency Response Unit Manager, and the SERC to:

- Work with OERS to review and update protocols to ensure that the OSFM is notified of hazmat transportation by rail incidents.
- Engage the Umatilla County LEPC in developing, adopting, and regularly testing a hazmat transportation by rail incident plan.

Moving Forward

In the years ahead, additional focus on pre-planning, training, inter-agency coordination, and exercises is needed. Oregon's collective success will be through the cooperation of all agencies involved maintaining a high level of accountability in preparing for future incidents. The Mosier Train Derailment After-Action Report assembled by OEM determined, among other things, that the OSFM would take a coordinating role in the facilitation of a planning, training, and exercise plan. Utilization of this information is paramount in providing first responders the tools for a safe, effective, and efficient response to rail incidents.

Inter-Agency Awareness and Integration of Response Plans

As identified through the Mosier after-action reviews and Northwest Area Contingency Plan stakeholder meetings, ensuring that local, state, federal, and tribal oil spill and hazmat rail emergency plans integrate effectively needs additional focus. The OSFM is seeking to collaborate with state and federal agencies to facilitate the delivery of workshops and other learning activities including:

- **Writing, Understanding, and Integrating Plans Seminar**
- **Road Closure and Traffic Incident Management Plans**
- **Tribal Lands, Authorities, and Resources Seminar**
- **State Operational Communications Capabilities Overview**

Full Scale Exercise

The OSFM strongly recommends a full scale exercise that focuses on a derailment and subsequent release of hazardous materials. To do so will require coordinated planning among local, state, and federal agencies expected to participate. Such an exercise will also require a significant funding source to cover the estimated $160,000 expense of staff planning and participation.

A full-scale exercise is intended to be a multi-agency, multi-jurisdictional, multi-discipline exercise involving functional (e.g., joint field office, emergency operation centers, etc.), and "boots on the ground" response (e.g., firefighters conducting damage assessment of a train derailment). It is intended to examine and/or validate planning,

coordination, and command and control decisions made between the various agencies and their associated response specific capabilities/functions. The exercise would play out the full-length sequence of events that take place during a hazmat transportation by rail incident. The incident would be presented as unfolding events with the initial incident scenario introducing the emergency and providing guidance if necessary by exercise cadre.

A recommended approach is to partner with one or several LEPCs and their regional hazmat team to develop and adopt a hazmat transportation by rail incident plan. Thus, testing the plan would serve as the basis for the full-scale exercise.

This partnered and phased approach lends itself to securing funding through the State's Homeland Security Grant program.

An alternative to grant funding would be to fund the exercise through monies allocated to the implementation of HB 3225. However, the estimated cost would nearly deplete available funds and detract from other expected planning, training and response coordination initiatives.