

“Bakken” Oil Train Derailment Regional Tabletop Exercise

After-Action Report
September 5th, 2014



King County

PREFACE AND PROJECT HISTORY

On June 24th, 2014 the King County Council passed Motion 14155 directing the Office of Emergency Management to create an Annex to the County Emergency Management Plan “CEMP” that “specifically address[es] the risk from increased transport of Bakken formation petroleum transport[ed] by rail”. This incident-specific plan is to be accompanied by a needs assessment report due to Council by October 31st, 2014.

On August 5th, 2014, the King County Office of Emergency Management facilitated a tabletop exercise which outlined a scenario involving the derailment and subsequent explosion of a train tanker carrying “Bakken” deep-shale oil. The lessons learned from that exercise as captured in this document will inform the report to Council as outlined in Motion 14155.

CAVEAT

The use of the term “Bakken” oil as it relates to a particularly volatile deep-shale crude oil from the Bakken formation which extends from Manitoba and Saskatchewan Canada into the US via Montana and North Dakota, is considered colloquial vernacular and used in this document for the sake of consistency with previous documentation. King County OEM makes no assumptions that volatile crude oil transported via rail is limited to “Bakken” deep-shale oil.

DEFINITIONS OF TERMS

AAR – After Action Report; a document that captures lessons learned from an exercise, part of the Homeland Security Exercise and Evaluation Program

BNSF – Burlington Northern Santa Fe; a private rail operator

EAS – Emergency Alert System; messages broadcast via television and radio

ECC / EOC – Emergency Coordination / Operation Center; a location to coordinate response / recovery activities

ESFs – Emergency Support Functions; discipline specific categories such as transportation, communications, public works, firefighting, and oil / hazardous materials response

LEPC – Local Emergency Planning Committee; a community-level planning group which seeks to plan for and communicate local environmental threats to citizens in a given jurisdictional area

OEM – Office of Emergency Management; the designated coordinating body for emergency planning and collaborative training for King County

WEA – Wireless Emergency Alert; text-messages sent directly to mobile devices within a given geographic area to alert the public to immediate threats to life safety

EXERCISE OVERVIEW

Exercise Name	“Bakken” Oil Train Derailment – Regional Tabletop Exercise
Exercise Dates	August 5 th , 2014 from 13:00 – 16:00
Scope	This exercise is a tabletop exercise planned to run 2.5 hours with a 30 minute hotwash immediately following at the King County Regional Communications and Emergency Coordination Center.
Mission Area(s)	Response
Core Capabilities	Planning, Public Information and Warning, Operational Coordination, Supply Chain Integrity and Security, Community Resilience, Threat and Hazard Identification, Risk and Disaster Resilience Assessment, Environmental Response / Health and Safety, Infrastructure Systems, Operational Communications, Public and Private Services and Resources.
Objectives	<ol style="list-style-type: none">1) Delineate roles and responsibilities between first responders, emergency managers, and private rail.2) Clarify jurisdictional authorities along local, county, state, federal and tribal boundaries.3) Determine method of comprehensive resource management throughout the response and recovery process.
Threat or Hazard	Explosion + Hazmat + Fire
Scenario	Oil train tankers carrying “Bakken” oil (a volatile form of crude oil), derail, spill, and catch fire near the intersection of I-5 and Martin Luther King Jr. Way near the southern border of Seattle and Tukwila in King County Washington.
Participating Organizations	Representatives from the Local Emergency Planning Committees “LEPCs” within King County, first responders, emergency managers, private sector partners, transportation and telecommunications, environmental health specialists, the Army National Guard, non-governmental disaster response groups, Pierce and Snohomish Counties.
Point of Contact	Alisha Griswold – Training and Exercise Program Manager King County Office of Emergency Management Alisha.Griswold@kingcounty.gov / 206-205-4069

OBJECTIVES AND DEMONSTRATED PERFORMANCE

Objective	Core Capability	Performance Demonstrated
1) Delineate roles and responsibilities between first responders, emergency managers, and private rail.	Community Resilience, Environmental Response / Health and Safety, Infrastructure Systems, Operational Communication, Operational Coordination, Planning, Public and Private Services and Resources, Supply Chain Integrity and Security, Threat and Hazard Identification	Performed without Challenges
2) Clarify jurisdictional authorities along local, county, state, federal and tribal boundaries.	Community Resilience, Environmental Response / Health and Safety, Infrastructure Systems, Operational Communication, Operational Coordination, Planning, Public and Private Services and Resources, Public Information and Warning, Supply Chain Integrity and Security, Threat and Hazard Identification	Performed without Challenges
3) Determine method of comprehensive resource management throughout the response and recovery processes.	Environmental Response / Health and Safety, Infrastructure Systems, Operational Communication, Operational Coordination, Public and Private Services and Resources, Supply Chain Integrity and Security	Performed without Challenges
Additional Core Capabilities observed beyond initial objectives	Risk and Disaster Assessment	Observed but not Performed
<p>Ratings Definitions:</p> <ul style="list-style-type: none"> • Performed without Challenges: The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. • Performed with Some Challenges: The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified. • Performed with Major Challenges: The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws. • Unable to be Performed: The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s). • Observed but not Performed: No objectives were set for these core capabilities, however, outcomes were observed. 		

CORE CAPABILITIES ASSESSED

Community Resilience	
Mission Area	Mitigation
Description	Lead the integrated effort to recognize, understand, communicate, plan, and address risks so that the community can develop a set of actions to accomplish mitigation and improve resilience.
Assessment / Analysis	King County lead a regional effort to identify the state of planning and coordination in regards to response and recovery from a derailed “Bakken” deep-shale oil train tanker. This capability was comprehensively assessed with substantial discussion and sharing between disciplines and jurisdictions.

Environmental Response / Health and Safety	
Mission Area	Response
Description	Ensure the availability of guidance and resources to address all hazards including hazardous materials, acts of terrorism, and natural disasters in support of the responder operations and the affected communities.
Assessment / Analysis	Key representatives were able to clarify concerns regarding the environmental impact of fighting the fire with retardant foam, the potential for inhalation hazards resulting from a smoke plume, and implications for waterways and sewers contaminated with flammable oil.

Infrastructure Systems	
Mission Area	Response, Recovery
Description	Stabilize critical infrastructure functions, minimize health and safety threats, and efficiently restore and revitalize systems and services to support a viable, resilient community.
Assessment / Analysis	The railways that traverse King County are undeniably critical infrastructure. Stakeholders, including private-rail operators, discussed methods of coordinating response and recovery of this vital regional asset.

Operational Communications	
Mission Area	Response
Description	Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.
Assessment / Analysis	Communication between local jurisdictions was determined to be cohesive and collectively understood. Notification procedures to state and federal authorities varies dependent upon regulatory compulsion to notify of an active incident, and sharing for situational awareness purposes. These notification triggers should be mapped and shared with all involved stakeholders.

Operational Coordination	
Mission Area	All
Description	Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.
Assessment / Analysis	Coordination between response agencies was determined to be strong. Notification procedures to state and federal partners could be more inclusive and faster, but first requires an understanding of required notification vs. sharing for situational awareness.

Planning	
Mission Area	All
Description	Conduct a systematic process engaging the whole community as appropriate in the development of executable strategic, operational, and/or community-based approaches to meet defined objectives.
Assessment / Analysis	A variety of sectors, jurisdictions, disciplines, and levels of government participated in this event. In addition, each participant brought the perspective and concerns of their agencies, stakeholders and community members in alignment with King County’s whole community planning practices.

Public and Private Services and Resources	
Mission Area	Response
Description	Provide essential public and private services and resources to the affected population and surrounding communities, to include emergency power to critical facilities, fuel support for emergency responders, and access to community staples (e.g., grocery stores, pharmacies, and banks) and fire and other first response services.
Assessment / Analysis	The majority of discussion centered around coordinated response to the incident, and included fire, law enforcement, public health, public works, environmental, and transportation perspectives.

Public Information and Warning	
Mission Area	All
Description	Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard, as well as the actions being taken and the assistance being made available, as appropriate.
Assessment / Analysis	Multiple communications platforms would be leveraged during a crisis, including opt-in “reverse-911” systems, EAS / WEA, and mobile notifications via IPAWS. The Joint Information System would develop messaging to be pushed out via social media as well.

Risk and Disaster Resilience Assessment	
Mission Area	Mitigation
Description	Assess risk and disaster resilience so that decision makers, responders, and community members can take informed action to reduce their entity's risk and increase their resilience
Assessment / Analysis	Subject matter experts and railway operators noted that the anticipated amount of tankers to be derailed would be three, with an anticipated fire burning for 8-12 hours without suppression before the use of fire retardant foam would be used. This gave a clear picture to responders and those tasked with recovery as to the scale of the most likely incident and the primary impacts which were (public health, environmental / ecological, traffic congestion, and aviation operations)

Supply Chain Integrity and Security	
Mission Area	Protection
Description	Strengthen the security and resilience of the supply chain.
Assessment / Analysis	Disruption of rail traffic for multiple hours is a serious threat to commerce and transportation within King County. It is clear that this threat is fully appreciated by private railway operators and that they are taking steps to ensure continuity of operations and mitigate risk.

Threat and Hazard Identification	
Mission Area	Mitigation
Description	Identify the threats and hazards that occur in the geographic area; determine the frequency and magnitude; and incorporate this into analysis and planning processes so as to clearly understand the needs of a community or entity.
Assessment / Analysis	The transportation of “Bakken” deep-shale oil over the railways presents a hazard to King County communities, however, this hazard is addressed through the Local Emergency Planning Committee’s Community Emergency Management Plan annexes for hazmat and explosions

CAPSTONE ANALYSIS AND AREAS FOR IMPROVEMENT

For all below, the incident referenced is a puncture and explosion of a “Bakken” deep-shale oil train tanker. All areas for improvement are tasked to King County and our regional partners.

- Identify locations, quantities, and types of equipment and resources that would be used to fight an incident as described above with an emphasis on fire / hazmat and environmental / public health.
- Further clarify the notification process of key stakeholders including the EPA, WA Department of Ecology, Public Health, and WA State Patrol all of whom may play a role in response and recovery to a crisis as described above.
- Identify primary Emergency Support Functions “ESFs” and their affiliated representatives expected to report to the EOC / ECC during response and recovery from a crisis as described above.
- Provide consistent information about the risks and hazards associated with “Bakken” deep-shale oil train tankers to elected officials and community members upon request. Ideally this would be on a public-facing digital platform accessible to the majority of our stakeholders.

RECOMMENDATIONS AND NEXT STEPS

Currently the federal government, who has ultimate jurisdiction over the railway operators, is considering multiple regulatory initiatives that will further mitigate the threat of a derailment and subsequent explosion of a train carrying “Bakken” deep-shale oil. For the past several years, King County’s three LEPCs have overseen the risk assessment and environmental impacts of a variety of chemical hazards. The subsequent plans contain detailed annexes that include the transport of chemicals via rail. In addition, the County Emergency Management Plans, and Regional Hazard Mitigation Plan contain frameworks that address coordinated response and recovery from a variety of hazards, including those which would apply to a multi-jurisdictional explosion, hazmat, and fire incident.

At this time, based on the status of current plans and federal initiatives, King County OEM and our LEPCs recommend amending the current County Emergency Management Plan Annex that addresses chemicals transported via rail. This planning initiative will be carried out by the representatives from our LEPCs in coordination with our regional partners.

King County OEM, our affiliated LEPCs, regional, and state partners will continue to monitor the legislation at the federal level, and work with our emergency planning counterparts to identify impacts to the communities within our jurisdiction. Additional findings will be reported to County Council until the directives outlined in Motion 14155 are completed. We hope that this document will serve as a regional recommendation for our cities, special municipalities, and tribal partners to inform their elected representatives as well.

EXERCISE PARTICIPANTS

Organization	Authority	Discipline
Army National Guard	Federal Govt	Army
Auburn Emergency Management	City Govt	EM
Burlington Northern Santa Fe Railway	Private Sector	Private Rail
Environmental Protection Agency	Federal Govt	Emergency Response Unit
Kent Fire	City Govt	Fire
Kent Fire/HAZMAT	City Govt	Fire
Kent Local Emergency Planning Committee	City Govt	LEPC
King County Department of Adult and Juvenile Detention	County Govt	Adult and Juvenile Detention
King County Department of Executive Services	County Govt	Communications
King County Department of Natural Resources and Parks	County Govt	Department of Natural Resources and Parks
King County Department of Transportation	County Govt	Transportation & Road Services
King County Fire Department	County Govt	Fire
King County Fire District 45/Duvall	County Govt	Fire
King County International Airport	County Govt	Airport
King County Local Emergency Planning Committee	County Govt	LEPC
King County Marine Division	County Govt	Marine Division
King County Metro Transit	Special Municipality	Transportation
King County Office of Emergency Management	County Govt	EM
King County Regional Communications and Emergency Coordination Center	County Govt	Volunteer
Northwest Healthcare Response Network	Special Municipality	Healthcare

Public Health Seattle King County	County Govt	Public Health
Red Cross	Non-profit	Disaster Services
Renton Fire	City Govt	Fire
Renton Office of Emergency Management	City Govt	EM
Renton Police	City Govt	Police
Renton Fire and Emergency Services	City Govt	Fire
SeaTac Office of Emergency Management	City Govt	EM
Seattle Department of Transportation	City Govt	Transportation
Seattle Fire	City Govt	Fire
Seattle Office of Emergency Management	City Govt	EM
Seattle Office of Emergency Management	City Govt	EM
Snohomish County Office of Emergency Management	County Govt	EM
Transportation Security Administration	Federal Govt	TSA
Tukwila	City Govt	Fire
Tukwila Fire	City Govt	Fire
United States Coast Guard	Federal Govt	Coast Guard
Valley Regional Fire Authority	Special Municipality	Fire
Washington State Department of Ecology	State Govt	Ecology
Washington State Fusion Center	Special Municipality	Federal / Regional
King County (Region 6) Zone 3 & 5 Coordinators	County Govt	EM

MAPS AND EXERCISE MATERIALS

