

## 14.0 Recommendations, Measurements, Policy, and Action Plan

This section presents recommendations for policy changes, actions, and measures that could be undertaken in the State of Iowa to aid in reducing the risk of incidents involving crude oil and ethanol transportation by rail in Iowa. By improving the preparedness and response to incidents, and the recovery from incidents the risks to life, public safety, property, and the environment may be reduced. All recommendations made are with the intent to maintain and enhance the economic competitiveness of Iowa's agricultural, industrial, and transportation industries, while also improving the quality of life and safety of Iowa's residents and visitors. These recommendations are intended to maintain Iowa's environmental stewardship and protection, and provide transparency to Iowa's citizens about the processes and plans that the state could implement in reducing risks to casualty of life, property, and the environment.

The recommendations are categorized as follows:

1. Identifying key communications protocols and practices improvements.
2. Training, equipping, coordination, and organization improvements.
3. Railroad safety practices, equipment, infrastructure, and organization improvements.
4. Shipper safety practices, equipment, infrastructure, and organization improvements.
5. Creating measurement methods for quantifying improvement in safety, reduction in risk, and effectiveness of policies.
6. Policy recommendations for organization of emergency response, , training and assistance, communications and response management, railroad and shipper inspection and public transparency.

Additionally, an Action Plan concept was developed that will aid all stakeholders in describing the key actions that can be taken to reduce risk of crude oil and ethanol rail and improve prevention, preparedness, and response. Iowa DOT and Iowa HSEMD will cooperate on the completion of the Action Plan prior to the release of the Study. The Action Plan concept is further described in Section 15.0.

Note: Tables 6 - 9, in Section 15, present a cohesive view of the findings, recommendations, and improvement actions related to crude oil and ethanol rail transportation, respective of Iowa's prevention, preparedness, response, and recovery capabilities.

### 14.1 Identification of Communications Improvements

The Study Team inquired about communications capabilities for local and state government departments and railroads operating in Iowa. Information was collected on day-to-day planning, training, exercise, and maintenance of situational awareness communications among the emergency management, first responder, and railroad operator community. The emergency communications capabilities study area focused on interoperable communications and the ability for the various members of the emergency response community (including railroad operators) to communicate with each other in support of emergency operations. Identified potential areas of improvement are provided below.

### 14.1.1 Non-Emergency Communications

Emergency management, first responders, and railroads in Iowa could potentially make the following improvements:

- Iowa DOT, Iowa DNR, and Iowa HSEMD may consider developing a hazardous materials transportation incident response planning committee to develop guidance and work with Local Emergency Planning Committees (LEPC) and emergency management coordinators to develop local incident-specific response plans and capabilities.
- Iowa HSEMD, on behalf of the SERC, should continue to work with local LEPC coordinators and emergency management coordinators to ensure that bulk Class 3 flammable liquid train traffic notifications are shared with emergency response partners who would normally be a member of an active LEPC, including the fire chief, police chief, and other response operational groups.<sup>104</sup>
- The state should consider working with the United States Department of Transportation (USDOT) to ensure the Fixing America's Surface Transportation (FAST) Act of 2015 addresses the gap between advance notification of Bakken oil and ethanol rail transportation when both commodities, carried in quantity are identified as high-hazard flammable trains by the FRA and Pipeline and Hazardous Materials Safety Administration's (PHMSA), and present the same risk to the local communities.<sup>105</sup>
- LEPCs should consider actively seeking participation by railroads and shippers, and providing them with a statewide schedule of LEPC meetings and agendas.
- Local emergency managers and first responders should consider working with the railroads on confidentiality agreements in order to receive commodity flow information annually from the railroads so that they have a better understanding of all potential hazardous materials that are transported along the tracks through their jurisdiction.
- The state of Iowa could create a series of public service announcements (e.g. short videos, social media, etc.) to create awareness for the critical facilities (e.g. daycare centers, nursing homes, hospitals, schools, etc.) located within hazard areas. This could provide emergency managers, who usually work with these facilities, another tool to educate the public and create awareness.

### 14.1.2 Emergency Communications

Emergency management, first responders, and railroads could potentially make the following improvements:

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<sup>104</sup> H.R. 22, 114<sup>th</sup> Congress, FAST Act, Title VII. Subtitle C. Section 7302(a)(3)(C).

<sup>105</sup> Fixing America's Surface Transportation Act. Specifically, Sec. 7302(a)(3). December 1, 2015. Retrieved from <http://transportation.house.gov/uploadedfiles/crpt-114hrpt-hr22.pdf>. January 11, 2016.

- Railroads, state and local authorities could work together to promote the “AskRail” mobile application statewide and work with first responders to obtain the required training and clearances to access the application.
- The state should consider updating its railroad GIS databases with an identification of the present ownership and operation of each railroad segment in Iowa and the appropriate railroad contact information. The state should consider furnishing this database to Iowa railroads and request verification of the information annually.
- The state should consider meeting with Iowa railroads to identify strategies to simplify and standardize methods of communication and coordination with railroads during an incident and share that information with local emergency managers.

## 14.2 Improvements to Training, Equipping, Coordination, and Organization

This section identifies improvements to training, equipping, coordination, and organization for the state’s railroads, producers/shippers, emergency management/response agencies and other state agencies.

### 14.2.1 Railroads

Railroads in Iowa could potentially make the following improvements:

- Provide additional safety and awareness training for railroad employees who work on or near active railroad property in order to better identify potential defects to track, bridges and structures, grade crossing surfaces, and signals and mechanical defects on locomotives and railcars in order to minimize the likelihood of derailments, hazardous materials incidents, personal injury, and other accidents.
- Enhance safety training coordination and discussion of best safety practices between railroads and between railroads and local emergency response agencies, when applicable.
- Recognize varying needs for information used by stakeholders (e.g. seasonal statistics vs. yearly statistics), and custom tailor information appropriately.
- Participate in additional opportunities for joint training exercises with Iowa’s shippers/producers and emergency management agencies.
- Share resource maps with all key stakeholders, showing the locations of emergency response equipment and firefighting foam resources. Contact information for railroad hazardous material personnel and hotlines could be included on this map. All information could potentially be reviewed annually and updated to reflect any significant changes.

### 14.2.2 Producers/Shippers

Producers/shippers in Iowa could potentially make the following improvements:

- Provide additional safety and awareness training for employees who work on or near active railroad track, railcars, and ethanol loading/unloading infrastructure in order to better identify potential mechanical defects, decrease the potential of personal injuries, and to minimize the likelihood of an improperly secured car rolling away and derailling.
- Participate in joint training exercises with Iowa's railroads and emergency management agencies.
- Enhance communication and coordination with railroads and emergency management agencies.

### 14.2.3 Emergency Management/Response Agencies and Other State Agencies

Emergency management/response agencies in Iowa could potentially make the following improvements:

- Increase participation in joint training exercises with Iowa's railroads and shippers/producers.
- Iowa HSEMD should consider developing a web portal that allows for better information sharing to include identification of lessons learned, exemplary practices, and railroad incident training opportunities to be accessible to all local first responders and emergency managers in the state.
- The state, along with the Hazmat Task Force, Iowa Firefighters Association, and railroads operating in Iowa, may consider assembling a focus group to identify ways to improve training, preparedness, and response capabilities for volunteer emergency responders.
- Iowa HSEMD and state agency and association partners should consider development of a comprehensive, one-stop web portal to provide access and guidance to training opportunities, grants, and other preparedness and response resources.
- The state should consider requesting Iowa railroads to report annually on their derailment prevention program by segment, including current derailment rate, and programs or practices undertaken each year to reduce derailment rate. This information would enable Iowa to target investments in derailment prevention to the counties with the highest risks.
- County officials should consider prioritizing the identification and maintenance of revenue to fund a full-time emergency manager in each county, or consider resource sharing among neighboring counties to create a full-time emergency manager position that serves a larger community or region. This increase in emergency management capacity would better serve the local planning, preparedness, and response needs of the local communities.
- In counties where crude oil and ethanol are transported by rail, local emergency management could profile and analyze rail incident risk and vulnerability to

identify and prioritize mitigation measures through their local and regional Incident Management Standard Operating Guidelines/Procedures.

- Counties and municipalities, with support from the state, should consider identifying, mapping, and assessing the vulnerability of the critical infrastructure and vulnerable populations located within 0.5 mile of rail lines to determine areas of highest risk, and then prioritize preparedness, response, or mitigation actions for those areas to reduce the risk and improve response.
- Iowa HSEMD could assist local emergency managers with the development of local evacuation and sheltering plans for rail incidents where public health and safety is at risk.
- Iowa DNR and Iowa HSEMD may consider polling local emergency managers and first responder groups to determine which counties need assistance enhancing LEPC membership, participation, and best practices.
- Iowa HSEMD on behalf of the SERC should continue to work with local LEPC coordinators and emergency management coordinators to ensure that bulk Class 3 flammable liquid train traffic notifications are shared with emergency response partners who would normally be a member of an active LEPC including the fire chief, police chief, and other response operational groups.<sup>106</sup>
- State departments including Iowa DOT, Iowa HSEMD, and Iowa DNR may consider working with local emergency managers and the railroads to develop local crude oil and ethanol (flammable liquids) transportation incident response standard operating procedures or guidelines.
- The Iowa Fire Service Training Bureau, Hazmat Task Force, and the crude oil transportation industry (including shippers and carriers) should work together to identify, fund, and offer specialized hazardous materials response training to all local, state, and tribal first responders. These partners should consider identifying and providing a mobile, local program of training and exercises that meets the appropriate response level criteria for the level of response anticipated by the local first responders. This response level capability should run from active firefighting response (when adequately trained staff are available) to appropriate geographical and situation stabilization activities in tandem with coordination with specialty response teams sent for support. Some responders may only need training on how to evacuate, shelter, and protect lives, while others may need training to support the regional hazardous materials responders (including foam application and hazardous materials decontamination).
- Iowa HSEMD and the Hazmat Task Force should consider establishing a statewide standard for firefighting foam capabilities for municipal fire department operations at a crude oil or ethanol spill and assist local fire departments and partner resources with designing a path that brings all responders to the same standard.

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<sup>106</sup> H.R. 22, 114<sup>th</sup> Congress, FAST Act, Title VII, Subtitle C, Section 7302(a)(3)(C).

- The Hazmat Task Force should consider conducting a study to determine how much firefighting foam should be accessible on a regional basis that can be deployed to a rail incident involving crude oil or ethanol.
- The state, in partnership with the Hazmat Task Force, should consider purchasing and strategically placing firefighting foam and application tools around the state for rapid deployment.
- Iowa HSEMD may consider developing a capabilities list of all the regional hazmat teams as a database to maintain situational awareness of the varied response capabilities of the teams, including training/certification levels of team members, equipment caches, availability of team members, and fee structures for each team.
- Iowa HSEMD could consider development of a comprehensive database of applicable state, and local equipment and resources, their location, team training and certification levels, availability, subscription or fee structure, and procedure for activation, deployment, and mobilization.
- Iowa HSEMD should consider working with Iowa DNR to update Iowa DNR’s list of private contractors operating in Iowa, and to ensure the list of capabilities, certifications, training, and equipment can then be made available to local emergency managers, first responders, and incident responsible parties.
- Iowa DOT and Iowa HSEMD should work with the American Short Line and Regional Railroad Association (ASLRRRA) and the Association of American Railroads (AAR) to include Class II and Class III railroads in the “AskRail” mobile application.
- The state should consider increasing state funding and seeking federal grants to focus on high safety benefit-cost ratio improvements such as removal of rail joints in bridges, bridge approaches, and crossings; and installation of asset-protection devices.

### **14.3 Improvements to Railroad Safety Practices, Equipment, Infrastructure, and Organization**

This section identifies improvements to safety practices, equipment, infrastructure, and organization for the state’s railroads that can be potentially implemented in the short-term and long-term horizons by the state’s railroads and the State of Iowa.

#### **14.3.1 Short-Term Improvements by the Railroads**

Iowa’s railroads could potentially make the following short-term improvements:

- Replace ties in main tracks, sidings, and yards and make general improvements to track surface as part of a routine track maintenance program.
- Install a fixed derail device on industry trackage at a location with a turnout to a railroad main track or siding.
- Install switch point protectors on main track turnouts.

- Enhance safety, emergency response, and training coordination and communication between railroads and between railroads and local emergency response agencies in Iowa.
- Report annually on their respective infrastructure investment and improvement programs by segment.
- Voluntarily maintain track structure and geometry to higher than federally acceptable levels established for each FRA Track Class, e.g. if the maximum allowable operating speed is 25 mph, or Class 2 for freight trains, then track could be maintained to Class 3 track standards. This practice could result in a higher detection of defects, due to tighter tolerances in track inspection practices. Firmer maintenance practices could also be adapted, allowing for conditions and/or defects to be appropriately remedied. Together, more frequent inspections and enhanced maintenance could result in safer conditions for trains, railroad personnel, and the public.

### 14.3.2 Short-Term Improvements by the State of Iowa

The State of Iowa could potentially make the following short-term improvements:

- Consider requesting of the Federal Railroad Administration (FRA) that it adjust the railroad’s advance crude oil transportation reporting requirements from a 25 percent change in volume to a smaller change in traffic volume (e.g. no more than a 10 train per week range variance or when a 10 percent or greater change in traffic volume is scheduled to occur).
- Consider increasing state funding and seeking federal grants to focus on high-safety benefit-cost ratio improvements such as removal of rail joints in bridges, bridge approaches, and grade crossings in addition to the installation of additional wayside asset-protection devices.

### 14.3.3 Long-Term Improvements by the Railroads

Iowa’s railroads could potentially make the following long-term improvements:

- Replace lighter rail sections (i.e. 75-100 lbs. / yd.) with heavier rail sections (i.e. 110-136 lbs. / yd.) on main tracks and sidings.
- Replace jointed rail sections on main tracks and sidings (including elimination of bridge joints, when applicable) with continuous welded rail that is free of joints.
- Replace main track turnouts.
- Install switch point indicators on select main track turnouts on lines that do not have a wayside signal system.
- Implement a Positive Train Control (PTC) system on Class I railroad main lines in Iowa that are required to have such a system. Under the Rail Safety Improvement Act of 2008, and a subsequent October 2015 extension of the Act, U.S. railroads have until December 31, 2018, to fully implement PTC. Iowa’s

Class I railroads have begun the development of PTC systems over main lines in Iowa meeting the criteria for such a system.

- Install additional wayside asset protection devices to mitigate against potential rail equipment defects and failures and associated rail damage (i.e. hot box detectors, dragging equipment detectors, and Wheel Impact Load Detectors).
- Upgrade bridges and other structures to accommodate railcars with heavier maximum allowable gross weights of 286,000 lbs.
- Replace wooden-pile bridge structures with corrugated metal pipes, pre-stressed concrete structures, and steel bridges.
- Convert open-deck bridges to ballast deck bridges to improve track geometry and ride quality.
- Replace rail in road/rail grade crossing surfaces, as necessary.
- Undercut or improve drainage at road/rail grade crossing surfaces, as necessary.
- Upgrade active warning devices at public grade crossings to include flashing light signals and gates, close public grade crossings, or grade separate public grade crossings. Grade crossing closures and grade separations could be prioritized based upon risks, accident trends, and other safety considerations.
- Work with industry organizations (e.g. Association of American Railroads, American Short Line and Regional Railroad Association, American Railway Engineering and Maintenance-of-Way Association, and FRA Railroad Safety Advisory Committee) to develop best practices for defect detector equipment spacing on hazardous material routes in Iowa. Also, these same entities could establish best practices for mud-fouled ballast, and its effects on track surface. Proactive interventions set forth by mud-fouled ballast best practices could help eliminate the frequency of track surface problems for railroads and decrease the likelihood of derailments.

#### 14.3.4 Long-Term Improvements by the State of Iowa

No potential long-term improvements by the State of Iowa were identified.

### 14.4 Improvements to Producer/ Shipper Safety Practices, Equipment, Infrastructure, and Organization

This section identifies improvements to safety practices, equipment, infrastructure, and organization for the state's producers/shippers that can be potentially implemented in the short-term and long-term horizons by the state's producers/shippers and the State of Iowa.

#### 14.4.1 Short-Term Improvements by Producers/Shippers

Producers/shippers in Iowa could potentially make the following short-term improvements:

- Enhance monitoring of potential mechanical issues and loading/unloading device defects for cars used in the transportation of ethanol in Iowa.

- Continue maintenance of detailed railcar inspection documentation, including an inspection checklist.
- Develop a uniform railcar inspection checklist for use by producers/shippers of ethanol in Iowa.
- Assure that hazardous materials placards on railroad tank cars carrying ethanol, whether loaded or empty with residue only, are properly displayed.
- Invite Iowa DOT track inspectors to inspect track at producer/shipper facilities and implement recommendations.

#### 14.4.2 Short-Term Improvements by the State of Iowa

The State of Iowa could potentially make the following short-term improvements:

- The Iowa DOT should consider hiring an FRA-certified motive power and equipment (MP&E) inspector to visit each Iowa ethanol facility on an annual basis to observe inspection practices and report on training, qualifications, and hand-off of tank cars from the ethanol refinery to the handling railroad. The state should consider coordinating with the FRA to obtain its ethanol refinery inspection reports.

#### 14.4.3 Long-Term Improvements by Producers/Shippers

Producers/shippers in Iowa could potentially make the following long-term improvements:

- Most railcar equipment used in the transportation of ethanol by rail is privately owned by shippers and railcar leasing companies. Continued investment could be made in upgraded or newly constructed railroad tank cars that have a thicker steel covering to increase strength and prevent puncture during a derailment or crash, thermal jacket design to withstand heat and reduce the risk of tank failure by fire impingement, and an enhanced bottom outlet valve designed to withstand impact from a derailment or crash, thus reducing the risk of leaks and spills.

#### 14.4.4 Long-Term Improvements by the State of Iowa

The State of Iowa could potentially make the following long-term improvement:

- Development of an ethanol refinery tank car mechanical inspection program for the state, based on its findings from its first year of ethanol facility inspections and coordination.

### 14.5 Improvements to Safety, Risk Reduction, and Policy Effectiveness

This section identifies methods for measuring improvements to safety, risk reduction, and policy effectiveness for the state's railroads, producers/shippers, the State of Iowa, and emergency management agencies.

### 14.5.1 Railroads

Railroads in Iowa could potentially make the following improvements:

- The results from this Study serve as a baseline for future comparisons, since the Study’s findings are a snapshot of current practices between Iowa’s railroads, producers/shippers, and emergency management personnel. The questionnaires that were sent out by the Study team (found in Appendix H) through Iowa HSEMD’s network of emergency management personnel could be easily duplicated in the future. Iowa railroads could potentially administer the same questionnaire and compare results to measure the perceived progress regarding safety, risk reduction, and policy effectiveness.

### 14.5.2 Producers/Shippers

Producers/shippers in Iowa could potentially make the following improvements:

- Maintain a coordinated inventory of emergency response assets with the railroads.

### 14.5.3 State of Iowa

The State of Iowa could potentially make the following improvements to the Iowa rail network:

- To maximize public-private coordination efforts, Iowa should recommend that the state, railroads, TRANSCAER, and other railroad-related organizations report annually on the results of their preparedness programs, using simple metrics such as number of local emergency managers and first responder organizations contacted and offered training and exercises; number of coordination meetings attended; and number of first responders trained and number of exercises held. Iowa could facilitate preparedness through tracking and providing the contact information of all local emergency managers and first responder organizations for each of the Iowa railroads, with respect to each railroad’s territory.
- The state could consider annual recovery program reporting by Iowa’s railroads. This information would enable Iowa to target recovery preparedness to counties where railroad recovery capabilities may have a shortfall.
- The state should consider developing a railroad “key derailment risk matrix” that identifies potential track, bridge, signal, grade crossings, and asset-protection risks, while tracking this over time for each rail line segment.
- The state should consider ranking at-grade crossings based on their risk relative to their exposure to crude oil, ethanol, and other high-risk hazardous commodities such as toxic inhalation gases, and the crossing’s proximity to risk to the public, and develop an investment program in conjunction with railroads and local and county governments that targets high-risk crossings.
- The state should consider increasing its funding level for at-grade crossing improvement projects, focusing on high safety benefit-cost ratio improvements such as closure, signage, and signaling.

#### 14.5.4 Local Emergency Management Agencies

Local emergency response agencies in Iowa could potentially make the following improvements:

- In counties through which crude oil and ethanol are transported by rail, local emergency management could profile and analyze rail incident risk and vulnerability to identify and prioritize mitigation measures through their local and regional Hazard Mitigation Plans.
- Counties and municipalities, with support from the state, should consider identifying, mapping, and assessing the vulnerability of the critical infrastructure and vulnerable populations located within 0.5 mile of rail lines to determine areas of highest risk, and then prioritize preparedness, response, or mitigation actions for those areas to reduce the risk and improve response.

### 14.6 Policy Recommendations

This section includes economic and safety policy recommendations for organization of emergency response, railroad and shipper inspection, training and assistance, communications and response management, and public transparency.

#### 14.6.1 Prevention

- Railroad infrastructure investment programs may vary by railroad, and may not address the most critical needs or match with risk profiles for each county, in Iowa. Railroads may not have the resources to improve track, bridges, signals, and grade crossings, or to install asset-protection devices such as Wheel Impact Load Detectors, Hot-Box Detectors, or Dragging-Equipment Detectors. The state of Iowa has limited knowledge of the practices of individual railroads and their operational and financial capabilities relating to improvements to rail, crossing protection, and safety devices to address critical needs. The state should consider an annual discussion with Iowa's railroads regarding their infrastructure investment and improvement needs.
- The State of Iowa could consider requesting Iowa railroads to report annually on their investment and improvement in infrastructure. This information would enable Iowa to target investments in derailment prevention to the counties with the states perceives to have higher risks.
- Iowa DOT should consider hiring an FRA-certified motive power and equipment (MP&E) inspector to visit each Iowa ethanol facility on an annual basis to observe inspection practices and report on training, qualifications, and hand-off of tank cars from the ethanol refinery to the handling railroad. The state should consider coordinating with the FRA to obtain its ethanol refinery inspection reports.
- The state should evaluate and refine an ethanol refinery tank car mechanical inspection program based on its findings from its first year of inspections and coordination.

## 14.6.2 Preparedness

- Based on recent federal legislation (FAST Act, December 1, 2015), the Iowa DOT and Iowa HSEMD may consider designating a program coordinator(s) to monitor and track compliance with new hazardous materials and railroad operations rules including, but not limited to, reporting hazardous materials transportation information to fusion centers and the State Emergency Response Commission (SERC) (and subsequent reporting to the state stakeholder agencies and local government emergency response community), High-Hazard-Flammable-Train reporting requirements, and DOT-117 rail car compliance.
- The state may consider requesting of the Federal Railroad Administration (FRA) that it adjust the railroad's advance crude oil transportation reporting requirements from a 25 percent change in volume to a smaller change in traffic volume (e.g. no more than a 10 train per week range variance or when a 10 percent or greater change in traffic volume is scheduled to occur).
- To maximize public-private coordination efforts, Iowa should recommend that the state, railroads, TRANSCAER, and other railroad-related organizations report annually on the results of their preparedness programs, using simple metrics such as number of local emergency managers and first responder organizations contacted and offered training and exercises; number of coordination meetings attended; and number of first responders trained and number of exercises held. Iowa could facilitate preparedness through tracking and providing the contact information of all local emergency managers and first responder organizations for each of the Iowa railroads, with respect to each railroad's territory.

## 14.6.3 Response

- State departments including Iowa DOT, Iowa HSEMD, and Iowa DNR should consider working with local emergency managers to develop local crude oil and ethanol (flammable liquids) transportation incident response standard operating procedures or guidelines.
- Iowa HSEMD and the Hazmat Task Force should consider establishing a statewide standard for firefighting foam capabilities for municipal fire department operations at a crude oil or ethanol spill and assist local fire departments and partner resources with designing a path that brings all responders to the same standard.
- The Iowa Fire Service Training Bureau, Hazmat Task Force, and the crude oil transportation industry (including shippers and carriers) should work together to identify, fund, and offer specialized hazardous materials response training to all local, state, and tribal first responders. These partners should consider identifying and providing a mobile, local program of training and exercises that meets the appropriate response level criteria for the level of response anticipated by the local first responders. This response level capability should run from active firefighting response (when adequately trained staff are available) to appropriate geographical and situation stabilization activities in tandem with coordination

with specialty response teams sent for support. Some responders may only need training on how to evacuate, shelter, and protect lives, while others may need training to support the regional hazardous materials responders (including foam application and hazardous materials decontamination).

- Iowa HSEMD may consider developing a capabilities list of all the regional hazmat teams as a database to maintain situational awareness of the varied response capabilities of the teams, including training/certification levels of team members, equipment caches, availability of team members, and fee structures for each team.
- Iowa HSEMD should consider working with Iowa DNR to update Iowa DNR's list of private contractors operating in Iowa, and to ensure the list of capabilities, certifications, training, and equipment can then be made available to local emergency managers, first responders, and incident responsible parties.
- Iowa DOT may consider establishing hazardous materials transportation reporting for Class II and III railroads operating in the state, to be consistent with the USDOT requirement for Class I railroad reporting.
- Iowa HSEMD and the Hazmat Task Force should consider establishing a statewide standard for firefighting foam capabilities for municipal fire department operations at a crude oil or ethanol spill and assist local fire departments and partner resources with designing a path that brings all responders to the same standard.

#### 14.6.4 Recovery

- The state should consider annual reporting by Iowa railroads on their recovery program. This information would enable Iowa to target recovery preparedness to counties where railroad recovery capabilities may have a shortfall.