Operational Plans for the Response and Mitigation of a Train Derailment in Pewaukee

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed:_____

Abstract

The problem for this research paper was that the Pewaukee Fire Department did not have an existing operational plan established for the mitigation of a train derailment. The purpose of the research was to create a plan for Pewaukee and responding mutual aid agencies to use as a guideline in the event of a train derailment with hazardous materials release.

Active research was used to determine how a train derailment with hazardous materials release affected communities across the country. Research was conducted to determine the potential hazards that may arise in the Pewaukee community in the event of a derailment. The research completed for this paper also looked to compare the plans other communities have created plans for such an incident.

Review of past train derailments proved evacuation was a key factor in establishing a viable plan. Mass evacuation plans were a common point in the research which would need to be part of the operational plan. The few responses for request of established plans also provided a need to establish the Incident Command System early in the incident. The ability to transition to an Emergency Operations Center with an established command system proved to be a key in the successful mitigation of an incident.

The proposed plan created in this paper take into account past derailments with emphasis on the early safety of citizens and emergency responders. Citizen notification of possible evacuation was a large component of the plan. The plan will be a stepping stone to be used by Pewaukee for future disaster plans.

Review of the proposed plan will need to be done by the department, City of Pewaukee Common Council, and mutual aid agencies before implementation. The plan will also need to be reviewed by both railroad companies that own the railroad lines running through Pewaukee.

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Operational Plans for the Response and Mitigation of a Train Derailment in Pewaukee

The history of the railroad system dates back to the early Babylonian times at about 2245 BC but only as recent as 1795 AD in the United States (Marshall, 1981). Trains are only one form of transportation used worldwide for the purpose of transferring goods, commodities, and people from one location to another.

Marshal (1981) cites the first railroad to be established for the transport of goods was in 1801. However, the United States started to see the benefit of using rail for both passenger transport as well as expansion to the west in the early 1830's (Stover, 1997). The use of the railroad system became the main route for which building materials could be transported to and from the east coast to the new cities forming in the west.

The use of the railroad system became essential as the United States started to grow and expand. The inherent dangers of the rail system also became a concern for both the rail companies and citizens at large. The government had concerns for the railroad system as they became more involved in funding and regulating of the rail companies.

The first reported train incident in the United Stated dates back to 1831 (Infoplease, 2012). The incident occurred in Charleston, South Carolina where an explosion on the locomotive of a passenger train killed two people. The incident was minor in comparison to incidents that have occurred since that time. The history of train derailments has been limited in documentation and far less documented with response planning by fire department agencies.

The Pewaukee Fire Department (PFD) has responded to various types of incidents involving the railroad system ever since their construction. The problem is the Pewaukee

Fire Department (PFD) has no operational guidelines in the event of a hazardous materials release due to a train derailment within Pewaukee. The purpose of this research is to prepare suggested operating guidelines for Pewaukee Fire Department and mutual aid personnel in the event of a hazardous materials release due to train derailments.

An active research method will answer the following questions:

1. How has a train derailment with hazardous material release affected communities in the nation?

2. What hazards does a train derailment present to the Pewaukee community?

3. What plans have been created to address hazardous material train derailments in communities with railroad lines?

4. What recommendations will be needed to implement an operational plan?

Background and Significance

The City and Village of Pewaukee are located in Waukesha County in Southeastern Wisconsin approximately 15 miles west of the City of Milwaukee. The combined population of 21,361 people is divided by the Canadian Pacific (CP) rail line that runs east to west and the Canadian Northern (CN) rail line that runs north to south (Bureau, Pewaukee (city) QuickFacts from US Census Bureau, 2012 a) (Bureau, Pewaukee (village) QuickFacts from US Census Bureau, 2012 b). Appendix A depicts the layout of the Pewaukee community and the routes of the rail lines through the community. The two rail lines intersect east of Duplainville Road in

which the community roots of Duplainville where originally named prior to Pewaukee becoming incorporated.

Duplainville was an unincorporated community where the Milwaukee Railroad built its east to west line through the community in 1855 (Mueller A. , 2012). Wisconsin Central Railroad Company built its north to south rail line crossing over the Milwaukee Road line in 1885. The lines transferred ownership over the years to the current CP and CN railroad line owners.

The City and Village of Pewaukee has a sorted past that has spanned over 120 years. The City of Pewaukee, formerly the town of Pewaukee, became a city in 1998 after decades of being a town. The City of Waukesha signed a written border agreement in 1998 which solidified the towns' border from further City of Waukesha annexation. The border agreements lead to the town of Pewaukee being able to petition the State of Wisconsin to become a city with no attempt by the City of Waukesha to block the petition.

The town of Pewaukee had been in existence since 1840. PFD has been established since the incorporation of the village in 1876 when the Village of Pewaukee split from the town. The fire department split into two entities when the village was incorporated in 1876 but was operated by a single chief working for both communities.

The two communities decided to create a joint department with one combined budget in 1996. The transition from a paid-on-call (POC) department to combination fire department brought in the first full time fire chief. The department continued to grow in the late 1990's and early 2000's. The department is currently 65 members strong with 17 full time firefighters, 5 full time chief officers, 1 POC chief, and 42 POC firefighters (Appendix B).

PFD joined the Lakes Area Hazardous Materials Team in 1997. The purpose of the team was to provide a systematic Level B hazardous materials response team to 12 communities in the western part of Waukesha County. The team consisted of members trained as Hazardous Materials Technicians from the various fire departments serving the 12 communities. The team responded to large fuel spills, chemical spills and leaks, and train derailments. A Level B team consisted of personnel who were trained to the Hazardous Materials Technician level and were trained to handle incidents involving personnel protection equipment (PPE) that were not considered completely encapsulated to protect personnel from all airborne toxins (Noll, Hildebrand, & Yvorra, 2005).

The most notable derailment for the team came on May 4, 2002 when a train derailed over Hwy 83 in North Lake (Hansen, 2002). The team responded to find eight train cars had derailed with a release of liquid nitrogen fertilizer. The main concern of the team was to prevent the liquid from spilling into the water way (Appendix C). No other chemicals were released from the other cars that had derailed. The incident was handled by the Level B team with the equipment, resources, and trained personnel that responded to the incident. Waukesha County decided to create a single Level B hazardous materials team to handle all hazardous materials responses in the county shortly following the incident in North Lake.

The City of Waukesha Fire Department (CWFD) was awarded the contract as the Level B hazardous materials team for the entire county. The Lakes Area Hazardous Materials team, the Menomonee Falls Fire Department team, the New Berlin Fire Department team, and the Brookfield-Butler joint team were all dissolved following the award of the contract to CWFD.

The State of Wisconsin also instituted the use of regional Level A hazardous materials team for future use of emergency management funding through the state and federal government (Mueller J. L., 2002).

The creation of the state regional teams meant that the City of Milwaukee Hazardous Materials team would become the regional state team for Level A hazardous materials response in Milwaukee, Waukesha, Jefferson, Ozaukee and Washington counties. A Level A hazardous materials incident provides personnel who are trained to the Hazardous Materials Specialist level who can operate in the hot zone in fully encapsulated suits that protect the personnel from all types of airborne and liquid forms of releases (Noll, Hildebrand, & Yvorra, 2005).

The decisions made by the county and the state meant the Lakes Area Hazardous Materials team and the other four teams would have to be removed from service and the assets from the team were turned over to the CWFD team. The funds from the sale of the equipment were divided amongst the communities that participated with Lakes Area Hazardous Materials team. The other communities that had purchased their respective equipment for their fire department team were also given funds for the sale of the equipment to CWFD.

PFD continues to provide initial response to all incidents that occur within the City and Village of Pewaukee. CWFD hazardous materials team would be requested by PFD to the scene of a hazardous materials incident upon completion of obtaining information vital to the type of response being requested of CWFD (City of Waukesha Fire Department, 2011). CWFD provides assistance in three levels of response to help mitigate the release. A Level one response is considered for utilizing their members for research and guidance only. A Level two response

provides two to four members of the team to respond with minimal equipment and resources to assist with handling the incident. A Level three response is a full team response with all of the teams' necessary resources and equipment. The responsibility of PFD is to assist with CWFD team operations plus continue all medical, fire, and/or evacuation process of the incident.

Research of operational plans for a train derailment in Pewaukee follows the National Fire Academy Executive Analysis of Community Risk Reduction course content regarding assessing risk within the community and creating a plan to reduce the possible risks associated with a train derailment (National Fire Academy, 2011). PFD will need to start the process by creating an operating guideline plan for this type of hazard. The research of this paper will be the building block for proper department, mutual aid, and community training and implementation. The guideline will also be a building block to create proper evacuation planning for any type of natural or manmade disaster that requires evacuation of the community.

The research conducted within this paper meets objective one and two of the 5 United States Fire Administration Operational Goals (United States Fire Administration, 2010). PFD plans to reduce risk at the local level through prevention and mitigation by creating a plan that keeps first responders safe during the response to a train derailment with hazardous materials release. The plan will also assist with preparing the community for the possibility of any disaster by having the community involved with understanding the possible risks and what would be requested of the community should a derailment occur.

The operational plan created through the research of this paper also helps improve the planning and preparedness of not only the first responders but the community at large. Community involvement in the plan will assist the City and Village of Pewaukee as they continue to prepare themselves and the community for worst case scenario of the risks in the community.

Literature Review

The possibility of a train derailment is of concern to any community with a railway system running through it. The planning and preparation for such an incident unfortunately is not as easily mitigated as the response to a structure fire. Fire departments train their personnel to properly fight the fire and to look for victims of the fire. Members receive training on a regular basis for this common type of response.

Training for a train derailment is usually not a common type of action taken by fire departments. The Zoneton Fire Protection District was not expecting to have to deal with a train derailment in the middle of winter in the morning of January 16, 2007 (National Transportation Safety Board, 2012).

The subsequent derailment overcame resources on the scene. 500 people were asked to either evacuate from the area or stay inside with ventilation systems shut down due to a release of cyclohexane, methyl ethyl ketone, and butadiene. The release of the flammable chemicals caused a fire with smoke drifting toward a small residential area. The need to evacuate some commercial structures as well was a concern for the responding agencies.

The chemicals that burned produced a thick acrid smoke which emergency personnel deemed hazardous enough to request the local schools be evacuated. The residents and commercial buildings in the area were requested to conduct self-evacuation. The buildings in the immediate area such as the school were evacuated to a safer location.

No immediate injuries were noted from the train derailment itself (CBS News, 2007). Emergency responders and citizens in the area were treated at local hospitals with respiratory distress symptoms due to the fumes produced from the fire. No fatalities occurred due to the derailment or inhalation of the fumes.

Scottsbluff, Nebraska responded to a similar train derailment where 5 train cars derailed spilling 80,000 to 100,000 gallons of dangerous chemicals (Shoemaker & McCarthy, 2001). The emergency responders also had a serious threat with a 20,000 gallon anhydrous ammonia storage tank close to the tracks in the vicinity of the derailment. Fortunately for the emergency responders, the storage tank was not damaged or a danger as a result of the derailment.

Emergency responders were able to obtain information from the DOT placard on the train cars as well as obtain information from the train consist. The train consist indicated that Scottsbluff could be dealing with benzene/dicyclopentadiene (Cloutier & Cushmac, 2008). The potential for this chemical being released from the tank car caused emergency crews to evacuate the area.

Emergency management for Scottsbluff was called to the incident to assist with evacuation orders for the area. Evacuees were instructed to relocate to a school three miles away from the incident site. Emergency crews from local jurisdictions were requested by Scottsbluff to

assist with the evacuation orders. Evacuees were not allowed back to their homes for almost 16 hours after the start of the incident.

The Weyauwega Fire Department in Wisconsin experienced a large scale train derailment five years prior to Scottsbluff. 17 days of stabilization and control of the hazardous materials spill with evacuation of 2,300 residents showed a very secure and well executed plan for such an incident (Burke, 1996). No injuries were reported due to the derailment itself. Injuries reported were heart attacks or minor trauma injuries due to evacuation of the area.

Mutual aid agencies were called in following scene size up by the incident commander. Crews were used to secure the area and start the evacuation process. Crews initially set up unmanned portable master stream devices to keep pressurized tanks from rupturing. Local, state, and federal agencies were requested to the scene to assist with stabilization of the incident. Wisconsin Department of Natural Resources (DNR), U.S. Environmental Protection Agency (EPA), Red Cross, and Federal Railroad Administration were just some of the agencies requested early in the incident.

Emergency crews arrived on scene to find several train cars derailed with numerous fires burning. The fires appeared to be threatening structures according to crews. Emergency personnel's immediate concerns were the fires burning near the tank cars containing propane and liquefied petroleum gas (LPG). All crews were immediately pulled back to a safe location upon discovery of the propane and LPG.

Among the 2,300 residents evacuated from the area, 200 were residents from a nursing home. Residents of the area were not allowed to return home for over 18 days and were

evacuated to a nearby city's former gymnasium (Burke, 1996). Problems arose with the evacuees not having clothing, medications, or money. Pets left at home because residents were in a hurry to leave the area also became a concern of evacuees. The Red Cross and Salvation Army were activated to assist with food, clothing, and lodging. The National Guard was deployed into the evacuated area with the task of searching for pets and reuniting them with residents.

The problems encountered for Zonetron Fire Protection District, Scottsbluff, and Weyauwega are not unlike problems that could be encountered in Pewaukee. Both the Canadian Pacific railway and the Canadian Northern railway bisect the community through residential neighborhoods and commercial properties (Appendix A). A train derailment on either track would create a large response with numerous mutual aid agencies involved.

The most common types of hazardous materials transported on each railway are depicted in Table 1 and 2. Information was transmitted to the author via email with express instructions for the information to be used for purposes of emergency planning. Table 1 and 2 are not listed by Railroad Company to maintain anonymity of where the reports originated from.

The tables are listed by most common type, amount, and frequency of delivery through Pewaukee on each railroad. The railroad companies would not supply total amounts transported over the railroads due to federal security regulations. Each company was only able to supply the name of the chemical, the Department of Transportation (DOT) classification number, and United Nations (UN) classification number based on information tabulated by their respective companies.

Table 1

Most Common Type of Hazardous Material Transported on One of Two Railroad Lines

Dangerous Goods Traffic

For Station WAUKESHA(56059)

January 01, 2011 to December 31, 2011

Proper Shipping Name	**Class**	**UN Number**
SULPHUR, MOLTEN	4.1	UN2448
COMBUSTIBLE LIQUID, N.O.S .	3	NA1993
ETHANOL AND GASOLINE MIXTURE	3	UN3475
HYDROCARBONS, LIQUID N.O.S.	3	UN3295
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	9	UN3082
SODIUM HYDROXIDE SOLUTION	8	UN1824
ELEVATED TEMPERATURE LIQUID, N.O.S.	9	UN3257
FLAMMABLE LIQUID, N.O.S.	3	UN1993
LIQUEFIED PETROLEUM GASES	2.1	UN1075
POTASSIUM HYDROXIDE, SOLUTION	8	UN1814
CHLORINE	2.3	UN1017
ALCOHOLS, N.O.S.	3	UN1987
BUTADIENES, STABILIZED	2.1	UN1010
ANHYDROUS AMMONIA	2.3	UN1005
PETROLEUM CRUDE OIL	3	UN1267
SODIUM CHLORATE	5.1	UN1495
METHANOL	3	UN1230
SULFURIC ACID	8	UN1830
GASOLINE	3	UN1203
PHENOL, MOLTEN	6.1	UN2312

Proper Shipping Name	Class	UN Number
HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS, STABILIZED	5.1	UN2015
PETROLEUM DISTILLATES, N.O.S.	3	UN1268
PROPYLENE, NOT ODORIZED	2.1	UN1077
GAS OIL	3	UN1202
OTHER REGULATED SUBSTANCES, LIQUID, N.O.S.	9	

Table 2

Most Common Type of Hazardous Materials Transported on Second of Two Railroad Lines

Traffic Density Study – CPR 2011
Top 25 Hazardous Materials Report

Provided to:	Andrew Norris Pewaukee Fire Department W239 N2242 Pewaukee Rd. Waukesha, WI 53188
Date Report Generated:	20112-06-10
Geographical Description:	City & Village of Pewaukee

Rank	Proper Shipping Name	UN #
1	ALCOHOLS, N.O.S.	UN1987
2	PETROLEUM CRUDE OIL	UN1267
3	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.	UN3082
4	SULFUR, MOLTEN	NA2448/UN2448
5	GASOLINE	UN1203

Rank	Proper Shipping Name	UN #
6	ELEVATED TEMPERATURE LIQUID, N.O.S.	UN3257
7	STYRENE MONOMER, STABILIZED	UN2055
8	MIXED SHIPMENTS CONTAINING-HAZARDOUS MATERIALS	N/A
9	SULFURIC ACID	UN1830/UN2796
10	BUTADIENES, STABILIZED	UN1010
11	PROPYLENE	UN1075
12	FLAMMABLE LIQUIDS, N.O.S.	UN1993
13	FUEL OIL	NA1993
14	SODIUM CHLORATE	UN1495
15	PETROLEUM GASES, LIQUEFIED	UN1075
16	PROPANE	UN1075
17	SODIUM HYDROXIDE SOLUTION	UN1824
18	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.	UN3077
19	METHANOL	UN1230
20	HAZARDOUS WASTE, SOLID, N.O.S.	NA3077
21	PHOSPHORIC ACID SOLUTION	UN1805
22	OTHER REGULATED SUBSTANCES, LIQUID, N.O.S.	NA3082
23	BUTANE	UN1075
24	PICOLINES	UN2313
25	FIREWORKS	UN0336

The potential hazards to Pewaukee in the event of a train derailment may occur due to any of the chemicals listed in Tables 1 and 2. Pewaukee has had numerous near misses of train derailments over the past decade. The majority of the train incidents that have occurred involve striking a pedestrian. Pewaukee has had one derailment that resulted in rail cars coming off the tracks with no product in the cars at the time. Table 3 depicts the type of train incidents that have occurred.

Table 3

Train Incidents in Pewaukee from 2000-2012

Date	**Type of Incident**
4/23/09	Train vs. Pedestrian at Oakton Ave. track
6/28/06	Train vs. Dump Truck pushed locomotive engine off track at CN line on Duplainville
10/4/05	Train vs. Pedestrian at Oakton Ave. track
1/31/02	Train derailment between Payne and Dolan plant and Harris Lumber
12/10/01	Train vs. car at Watertown Rd. track
9/14/00	Train vs. car at Duplainville track

Appendix D is a copy of an email request to the State of Wisconsin Fire Chief's Association email list requesting information from the State Fire Chief's about their community planning for train derailments. 854 fire departments represent the State of Wisconsin

(Wisconsin Safety and Buildings Division, 2012). Departments in Wisconsin do not have established a set policy or guideline for response to a train derailment.

Train tracks do not run through each and every community. Likewise, not each fire department in Wisconsin is part of the Fire Chief's Association. The limited number of fire chiefs who responded to the email in Appendix D produced policies that reflected Incident Command positional roles compared to guidelines for full response to a train derailment.

Train derailments do not occur on a regular basis unlike an emergency medical incident or a structure fire. The result is a community not spending time planning for the possibility of the hazards that may occur due to a derailment. Communities prepare for incident types they will need to respond to regularly. They are prepared for those types of incident to ensure proper mitigation of the incident along with responding safely and efficiently.

Procedures

The author researched common responses procedures from emergency agencies across the nation who has responded to train derailments. The common response from time of incident to arrival and the agencies requested to the scene was the starting point for the recommended operational guideline. The emergency response to a derailment is the first to the creation of an operational plan. The emergency response was drawn from current guidelines in place by PFD.

The author researched communities that have responded to incidents involving train derailments with the emphasis on hazardous materials response. Hazardous materials incident response to a derailment or to a fixed facility has similar response. The author was able to utilize

common parts of a response for hazardous material release as a basis for initial crew responsibilities. Noll, Hildebrand, and Yvorra, 2005 established a recommended procedure for an eight step process to handling a hazardous materials incident. The author used the recommendations as a building block to organize the response of emergency personnel portion of the plan.

The response to an incident based on fire department guidelines was used to start the mitigation process of the operational guideline (Pewaukee Fire Department, 2005). The response to a train incident involved the initial PFD companies to respond to determine the nature of the incident. Responding personnel must conduct the initial on scene assessment in order to determine the level of response needed for the incident. The author researched various levels of hazardous materials response (Noll, Hildebrand, & Yvorra, 2005). A Level III response involves a large scale type of incident that requires numerous agencies to mitigate a severe hazardous environment with possible large scale life threat. A train derailment with hazardous materials release would be considered a Level III type of response.

The author researched steps to carefully implement action plans to handle a train derailment that included proper safety procedures for both responding personnel as well as evacuation of possible community citizens that may be in immediate danger as a result of hazardous material. The railroad companies were contacted to determine what types of hazardous materials were being transported through Pewaukee.

Tables 1 and 2 produced the list of most common types of materials transported. The list was researched to determine the hazard level citizens may be faced with should a derailment

occur. The list was obtained by contacting both the CN and CP railroad companies. The author sent the proper request form to obtain the flow information after contact was made with each company (Appendix E). The author was able to meet with the Dangerous Goods Officer from CN railroad to discuss operational procedures in the event of a derailment.

The Dangerous Goods Officer provided a copy of the CN Emergency Response Plan as a foundation for creating an emergency operating guide for PFD (Canadian Northern, 2010). The CN Response Plan was reviewed for procedures about dealing with a train derailment on the CN railroad line. The plan was reviewed for agency notification procedures in the event of a train derailment on either the CN or the CP railroad line in Pewaukee.

The author read plans obtained from agencies across the State of Wisconsin to assist with development for the PFD guidelines. Information was sparse, but the guidelines obtained assisted with a layout for the operational plans from an Incident Command System (ICS) perspective (City of DePere Fire Department, 2005). The information obtained assisted with Incident Command (IC) staffing position responsibilities for management of a train derailment.

The review of previous incidents across the country started the process of creating an operational guideline. The guideline from one fire department assisted with creation of the ICS portion of the guideline. The information obtained from the individual railroad companies allowed the author to research hazards associated with a release from a train derailment. The research allowed the author to plan locations for evacuation of citizens in the event evacuation would be required.

Results

The information about established train derailment operational guidelines was difficult to obtain. The author found that few fire departments have an operational guideline for train derailments within their communities. Not every community has a railroad line running through their community so the need for an operational plan may not be required. The lack of existing plans limited the author in obtaining data for this research report.

The review of national train incidents confirms that evacuation planning is a large component of the plan. A hazardous materials release at an incident can be handled just like a fire department would handle a release at a fixed facility (Noll, Hildebrand, & Yvorra, 2005). The procedures to handle a hazardous materials release created in the proposed operational plan can follow standard guidelines for hazardous materials incident management.

A hazardous materials release request for hazardous materials teams would follow the established procedures used by the City of Waukesha Fire Department Level B team (City of Waukesha Fire Department, 2011). Procedures for request of mutual aid agencies are covered by the Mutual Aid Box Alarm System (MABS) plans for hazardous materials as shown in Appendix F. The specific tactical use of mutual aid agencies will be determined on an incident to incident basis. The operational guideline provides suggested tasks that would need to be performed by the responding resources.

Reprinted copies of information obtained from the Department of Transportation (DOT) Emergency Response Guidebook for the most commonly transported chemicals on each list of Table 1 and 2 are depicted in Appendix G. Molten Sulfur is referred to in the DOT guidebook as

Guide 133 while Alcohol N.O.S is referred to Guide 127. Large spills of either chemical state to have an evacuation of at least ½ mile in either direction of the spill site (Cloutier & Cushmac, 2008). The DOT guidebook would be the first resource used to determine incident action plans for the response in the event of a derailment with hazardous materials release.

Appendix H shows a ½ mile evacuation radius of a possible derailment along both railroad lines. Two incidents were picked close to a residential subdivision and near a business park along the CN rail line that runs north and south. Two more possible incidents were chosen for the CP rail line that runs east and west. One was placed close to a residential area and the other was placed in the downtown Village of Pewaukee business district.

The locations chosen resulted in a possible 100-250 people needing evacuation based on location and time of day. One possible notification to these areas for evacuation would be through the use of the Community Notification procedures of the Waukesha County Communications (WCC) dispatch center (Tuma, 2012). The procedures allow the dispatch center to choose a geographical area determined by the Incident Commander to send a mass prerecorded phone message to all phone numbers in the geographical area to be evacuated due to an emergency.

Procedures for evacuation were also adopted from the City of Pewaukee Emergency Operations Plan, 2011. The plan provides for steps needed for a mass evacuation as well as contact information for calling assisting agencies to provide help in the event of an evacuation. The evacuation plan would be implemented at the incident scene prior to or as the Emergency Operations Center at the City of Pewaukee is being set up for the assistance to the incident scene.

The draft operational guideline that is created in Appendix I will need to be presented to the PFD command staff and department members. Members of the department and the command staff will need to understand the procedures created in the plan prior to notification to the City and area mutual aid communities. The draft plan takes into account initial procedures for identifying the type of derailment that emergency responders are going to encounter.

The plan provides guidance for establishing a safe perimeter in the initial response and procedures for proper notification of agencies that may become involved. Incident Command System functions are discussed for the emergency responders. The plan incorporates the ICS as a basis to manage the incident. The plan provides transition to a long duration incident that would involve establishment of the EOC.

Discussion/Implications

The lack of established operational plans limit the ability to provide data for the creation of a plan based on existing plans already implemented. The use of the CN Emergency Response Plan assisted with providing guidance of what CN would be looking for when a derailment occurs on their railroad track. CP was not able to provide a plan to assist with requirements for a derailment on their railroad track. The author created the operational guideline in Appendix I based on established steps and procedures to respond to a hazardous materials incident at any type of location. Operational guidelines for a derailment are based on safety practices used from incident analysis of the scene and past practices learned through training.

The information about how a department operated at a train derailment was difficult to compile due to the decreased occurrence of train derailments with hazardous materials release.

The Association of American Railroads reports that 99.998 percent of the rail shipments involving hazardous materials reach their destination without release or derailment (American Association of Railroads, 2011, March). The lack of derailments would indicate that even though the risk is high when a derailment occurs, the frequency is so low that fire departments are not as concerned about having an operational plan in place.

The hazards associated with a derailment are far reaching. The need for a plan in place to provide for proper emergency response, mitigation of the incident, relocate potential evacuee's, provide proper notifications, and the need to assist businesses vital to the community is paramount in Pewaukee. The research for this paper did not include a business contingency plan to assist business owners. The plan only included response, mitigation, evacuation, notification, and termination of a derailment incident. The plan focused on steps and procedures for evacuation of citizens affected by a possible derailment. Research showed the need for an established plan to handle citizens whose lives have been severely disrupted by a train derailment incident.

The creation of the proposed draft plan allows the department to further create plans for other types of natural or manmade disasters (Appendix I). The proposed plan emphasized the need to take care of the citizens in Pewaukee and the emergency responders. Plans may be created after the proposed train derailment plan is completed can focus on such things as business plan contingencies and recovery.

Any type of long duration incident has a large impact on the citizens and businesses in a community. Emergency planning and preparation for an incident such as a train derailment

provides the community the ability to resume normal life following the incident. The proposed plan is just one step in making Pewaukee a safer community to live to and work.

Recommendations

The draft plan created in Appendix I will need to be submitted to the PFD command staff for review. The first review process would involve questions and revisions of the plan. Staff members would review the plan for proper safety procedures and understanding how to start the process of handling a train derailment. The plan would then be revised and prepared for final staff approval.

The final plan would then need to be approved by the City of Pewaukee Common Council for adoption as part of the Emergency Operational Plan. The guideline would the first step for emergency responders to follow in the event of a derailment. The guideline would need to be incorporated into the City Emergency Operational Plan so members arriving to staff the Emergency Operations Centers (EOC) will understand the steps already in progress for the incident.

Notification will need to be made to the agencies listed on the MABAS box alarm card (Appendix F). The MABAS agencies will receive the final approved copy of the plan to review and ask questions about what their role in the plan would entail. The agencies would also be able to reaffirm their availability to provide assistance as approved in the MABAS plan (MABAS Wisconsin, 2009).

The plan will also need to be reviewed by both railroad companies. The CN Dangerous Goods Officer would need to review the final plan to understand how it would work with their Emergency Response Plan. The plans would need to complement each other so as CN emergency responders arrived they would understand how PFD would be operating at the incident prior to their arrival. CN and PFD could then seamlessly continue the operations to complete the incident with as little harm to people and the environment.

The CP Dangerous Goods Officer will also need to review the plan to determine if there are any other requirements that CP would need prior to their arrival. CP railroad would also be able to enter the scene understanding operations completed prior to their arrival.

The department personnel would then be given copies of the plan with formalized training about the plan set up. Members will need to understand how they would respond and what their roles would be in the event of a train derailment. Department members would also be trained on the types of cars that carry hazardous materials and what information would be needed from the train numbers or trains consist.

Two documents that would assist personnel with understanding train cars and what to look for would be the United States Hazardous Materials Instructions for Rail (Association of American Railroads; Bureau of Explosives, 2011) and the General Guide to Tank Cars (Union Pacific, 2006). Each document has detailed information about requirements for transportation of hazardous materials over a rail road as well as information about how to identify different types of train cars that would carry hazardous materials.

The department would also send a copy of the completed guideline to area fire departments that have agreed to respond to assist PFD on a mutual aid basis but are not listed in MABAS card. The departments not listed in the MABAS card may be requested for assistance with a possible derailment within Pewaukee (Appendix F). The area departments would have the opportunity to review the guideline and provide any additional comments or suggestions to ensure the plan will operate smoothly in the event of a derailment. Area departments will also have the understanding of how an incident will operate within Pewaukee and the departments will know what their role will be to assist PFD.

The next step once all agencies have reviewed the plan would be to conduct a table top exercise to practice the plan. The exercise would be run to evaluate how shift personnel would handle initial response procedures to attain proper safety of the scene and how to conduct proper identification of the tank cars with possible hazardous materials release. The exercise evaluation will include proper communications plans for on scene crews plus evaluate proper notification of various agencies that will need to be involved in the mitigation of the incident.

A second part of the table top exercise will be to evaluate use of the City Emergency Operations Center (EOC) in conjunction with train derailment and hazardous materials release. Inclusion of the EOC will evaluate the effectiveness of the overall City plan. The exercise will evaluate the transition of a Unified Command on the scene to a remote Command post. The exercise will test the abilities of the EOC to perform the proper functions of an EOC by utilizing an operational scene plan that has been established by emergency response personnel.

The plan may need to be revised following the table top exercises based on feed back information about performance and execution of the plan. All aspects of the plan will be revised based on the feedback. The plan will then be established as a guideline and included in the overall City plan.

The final recommendation would be to conduct a live training exercise. The live exercise and simulation would be a large process to establish. The time and effort may take up to one year or more to establish. Conducting a large scale training exercise of this magnitude may be the best option to truly test the plan. Coordination from all agencies that would be involved becomes the key. All agencies involved in the training will have a great understanding of how the plan would operate under a real situation.

Testing the plan in a live simulation would also allow other fire and police agencies to view how the plan would be executed and possibly use the process to take back to their communities for further development.

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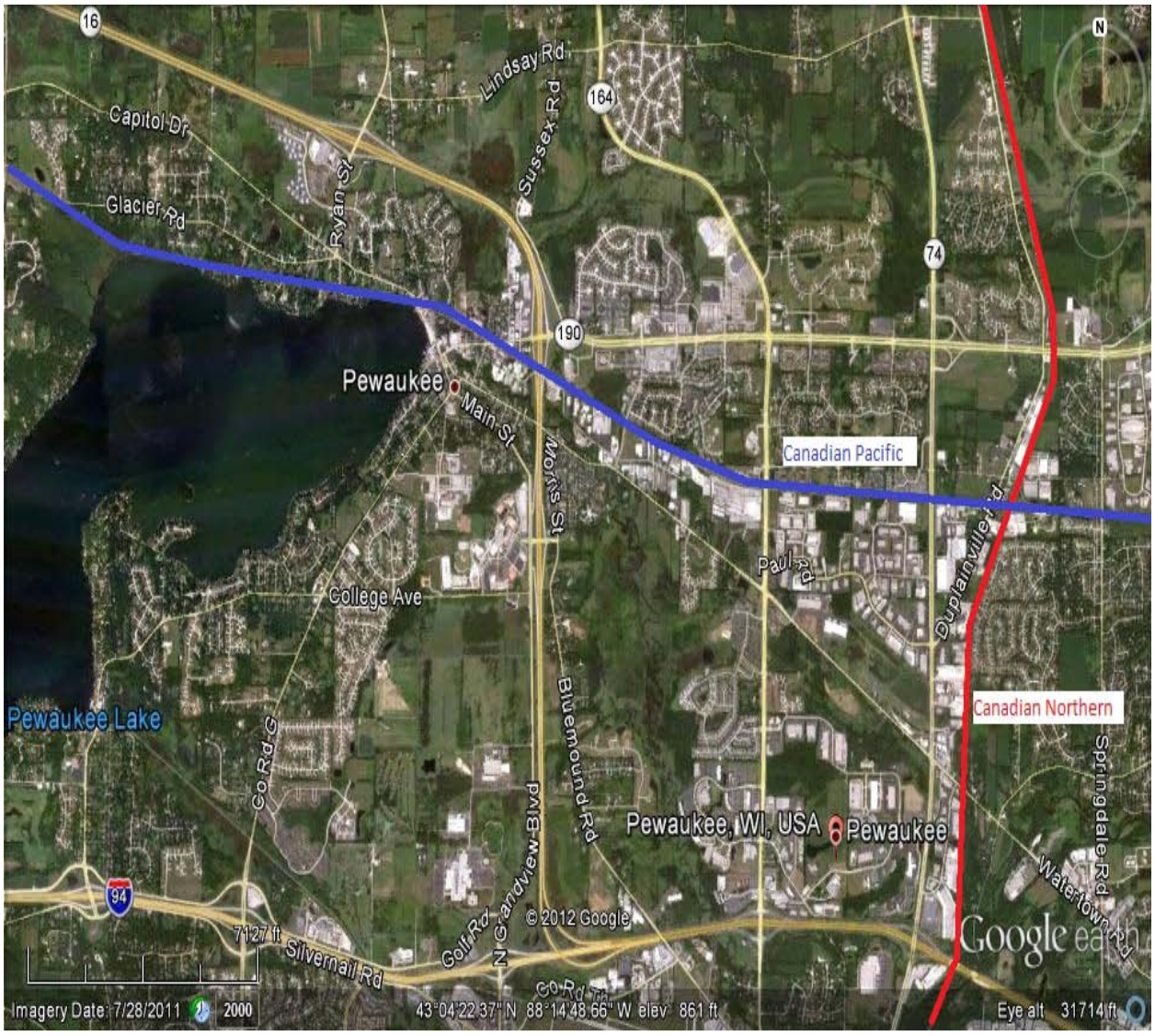
Appendix A

Map of Pewaukee



Appendix B

Staffing Roster

Pewaukee Fire Department Staffing Roster 2012

	Station One Nights			Shift Extra			Station Two Nights			Day Crew		
Black A	0551	Dobersek	M/I				0806	Frederick	A/P	0671	Semm	A/I
	0992	Wroblewski	F/P				0968	Witzel	F/E	0793	Barbian	F/P
				Black Shift						0819	Ryan	F/P
										0879	Buckingham	F/P
Black B	0948	Island	F/E							0914	Schulz	F/I
	0930	L. Babe*	F/P							0927	Kuhs	M/I
										0929	Zimmerman*	M/P
										0937	Mercado	F/E
Red A	0925	Pabelick	M/E				0739	S. Rohde	M/I	0942	Ziegler	F/P
	0987	Schieble	F/E				0986	Schrader	F/E	0963	M. Burg*	F/P
				Red Shift						0969	Plato	F/P
										0972	Dacenko	F/I
Red B	0980	Wood	F/E				0697	Ballenger	A/P	0977	Werlein	F/E
	0990	Berndsen	F/P				0967	Balzer	F/E	0982	Dembinski	F/E
										0983	Scheel	F/P
										0984	Vullings	F/E
Green A	0957	E. Burg	M/E				0965	Mindiola	F/E			
	0982	Adams	F/E				0989	Graser	F/P			
				Green Shift								
Green B	0991	Johnson	F/P				0910	Gannon	M/P			
	0975	Hayes	F/E				0976	Weber	F/E			

E = EMT-Basic	A = Aerial Operator
I = IV Tech	M = Engine Operator
P = Paramedic	F = Firefighter

		Norris				Rohde					Friedel	
Black St. 1	0589	Hagen	A/I	Red St. 1	0768	Argue	M/P	Green St. 1	0796	Pierson	A/P
	0939	Mersenski	M/P		0783	Hetherington	M/E		0829	Bobrowitz	A/E
					0860	Grospitz	A/P		0964	MacLaughlin	F/P
Black St. 2	0577	Bruchert	A/I	Red St. 2	0803	Misiak	A/P	Green St. 2	0579	Derusha	A/I
	0633	McCartney	A/P		0903	Schneider	A/P		0607	Sherman	A/P
	0789	Hendry	A/P		0970	Gluth	F/P		0845	Delaney	A/P

Appendix C

Liquid Nitrogen Material Safety Data Sheet

MATERIAL SAFETY DATA SHEET **28-00-00**

AGRISOLUTIONS **Liquid Fertilizer**

For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident,
CALL CHEMTREC – Day or Night 1-800-424-9300 or 1-800-228-5635

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: 28-00-00 Liquid Fertilizer

Synonyms:	28% UAN
Company ID:	Agriliance, LLC PO Box 64089 St. Paul, MN 55164-0089
Phone #s:	Emergency Phone Number - CHEMTREC (day or night): 1-800-424-9300 For Medical Emergency - Call 1-877-424-7452
Date: 07/01/03	Supersedes: New

2. COMPOSITION INFORMATION ON INGREDIENTS

Component	CAS Reg. No.	%
Ammonium nitrate	6484-52-2	39.4
Urea	57-13-6	30.6
Water	7732-18-5	30.0

Typical N-P-K Composition

Total Nitrogen as N	28%
Total Phosphorus as P_2O_5	0%
Total Potassium	0%
Fertilizer salts, inert ingredients	72%

See Section 8 for Personal Protection Limits (PPE).

3. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance & Odor: Colorless solution, with slight fertilizer odor.
Warning Statements: This is a liquid fertilizer product and we should avoid extreme temperatures. Not generally harmful if swallowed, ingestion of large amounts may cause systemic ammonia poisoning and nitrate poisoning. May cause aggravation of the eyes. May cause local discomfort if skin with cuts is exposed.

Potential Adverse Health Effects:

Eye Contact:	May cause eye aggravation.
Skin Contact:	Not absorbed through the skin.
Ingestion:	Not generally considered hazardous. Ingestion of large amounts may cause ammonia and/or nitrate poisoning.
Inhalation:	Low problem under normal conditions, if difficulty in breathing, remove to fresh air.
Effects of overdose:	Ingestion of large amounts may cause dizziness, abdominal cramps, vomiting and diarrhea and discomfort to skin and eyes.

4. FIRST AID MEASURES

If in Eyes:	Flush with cool water for 15 minutes. Remove contact lenses, if applicable and continue flushing for 15 minutes. Hold eyelids apart to rinse the entire surface of the eyes and lids. Seek medical attention if irritation persists.
If on Skin:	Wash skin with soap and water. Obtain medical attention if irritation persists.

MATERIAL SAFETY DATA SHEET **28-00-00**

AGRISOLUTIONS **Liquid Fertilizer**

If Swallowed: Induce vomiting after the victim drinks 1 to 2 glasses of water. Never give anything to a person who is unconscious. Obtain medical attention.

If Inhaled: Remove to fresh air. If not breathing, call 9-1-1 and provide mouth-to-mouth resuscitation. Seek medical help if breathing is difficult.

5. FIRE FIGHTING MEASURES

Flash Point: Non-flammable. Flammable Limits: Not established.

Extinguishing Media: Considered non-combustible, use medium appropriate to surrounding fire, water spray or fog, foam, carbon dioxide or dry chemical.
Special Fire Fighting Procedures: None in liquid state. Organic and oxidizable materials can sensitize dry ammonium nitrate to a readily explodable state; can detonate if heated under confinement with high pressure. Provide for the protection of the employees and residents: Notify local authorities that firemen should wear self-contained breathing apparatus with full protecting clothing, be immediately relieved from duty, if exposed to contaminated smoke which may include and are not limited to oxides of nitrogen and carbon; and ammonia when heated to decomposition. See section 11 for toxicological data.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Prevent entry into sewer or waterways.
For small spills, absorb in sand or kitty litter or other absorbent, then sweep up and use as a fertilizer by applying to soil using good agricultural and soil management.
For large spill on roadside, avoid contamination of water ways as this liquid fertilizer will increase algae formation, use diking to keep the spill in the ditch. Use loader to remove fertilizer and soil and apply the mixture as a fertilizer using good agricultural and soil management. Replace removed soil and leave as it was before the large spill.

7. HANDLING AND STORAGE

Keep temperature above 32°F to keep solution liquid and be able to transfer. Be sure to use proper confined space entry procedures when entering storage tanks or pits. Do not allow the solution to dry. Protect from excessive heat. Store in a cool, dry place away from children, food, feed and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment:]
Eye Protection: Safety glasses or chemical splash-proof goggles.
Skin Contact: To avoid skin contact, wear normal working clothing such as coveralls or long-sleeved shirt, long pants and boots.
Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washing, use detergent and hot water. Keep and wash PPE separately from other laundry.
Respiratory Protection: None required under normal operating conditions.
Ventilation Protection: Provide adequate ventilation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless liquid.	Odor:	Slight odor.
Solubility:	Complete in water		

MATERIAL SAFETY DATA SHEET **28-00-00**

AGRISOLUTIONS **Liquid Fertilizer**

Specific gravity: 1.28 @ 60°F pH: 6.5. –7.5

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable
Conditions to Avoid: Excessive heat and fire conditions.
Materials to avoid: Organic and easily oxidizable matter.
Hazardous Decomposition Products:
Oxides of nitrogen, carbon, and ammonia will be formed when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Routes of entry: Eye, skin contact, inhalation and ingestion.
Eye Irritation: Low
Skin Irritation: Slight potential

Acute Oral LD_{50} (rat): >2000 mg/kg
Acute Dermal LD_{50}(rat): >5000 mg/kg
Carcinogenicity: Not by NTP or IARC.
Low acute toxicity to fish

12. ECOLOGICAL INFORMATION

Acute aquatic toxicity: Fish 96-hour is greater than 103 mg/L not toxic to aquatic organisms.
Liquid fertilizer discharges. Avoid discharges into waterways as fertilizer can cause nitrification and algae blooms.

13. DISPOSAL CONSIDERATIONS

Steps to be taken if material is released or spilled

Wear proper PPE found in section 8. Contain, absorb and maximize recovery.

Precautions to be taken in handling and storing

Protect from excessive heat. Store in a cool dry place away from water, food and feed.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in the Handling and Storage Section, Section 7 of this MSDS.

DOT Classification: Not regulated by US DOT
Reportable Quantity: None

15. REGULATORY INFORMATION

SARA Hazard Notification/Reporting

Immediate Y Fire N Sudden Release of Pressure N
Delayed N Reactive N

SARA Title 313, Toxic chemicals: Ammonium nitrate solution
Section 302-304 (30 CFR 350): None

MATERIAL SAFETY DATA SHEET **28-00-00**

AGRISOLUTIONS **Liquid Fertilizer**

Extremely hazardous substance (EHS): None
SARA/OSHA Hazardous chemical reporting quantity: None.
RCRA Hazardous waste: None

16. OTHER

Reasons for revision: New ANSI Format.

National Fire Protection Association (NFPA)
Hazardous Materials Identification System (HMIS)

	NFPA		HMIS	
		0 Least		
	1 Health	1 Slight	1	Health
	0 Flammability	2 Moderate	0	Flammability
-	0 Instability	3 High	0	Reactivity
		4 Severe	D	PPE

Prepared by: Dennis E. Belau Reviewed by: Kip Landwehr

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Agriliance, LLC makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Agriliance, LLC Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Appendix D

Email to State Fire Chiefs

From: Norris, Andrew
Sent: Monday, August 06, 2012 10:25 AM
To: chiefs@mailman.wsfca.com
Subject: Train Derailment Information

Good Morning -

I am currently working on my 2nd year EFO paper. The subject is about train derailment with hazardous materials release mitigation in our community. I am looking to see if anyone has a policy, SOG, or emergency operating guidelines for a derailment with release in their community?
Any information that you may have would be very helpful. Please feel free to email what you have to me.

Sincerely,

Andrew Norris
Division Chief
Pewaukee Fire Department
W239 N2242 Pewaukee Rd.
Waukesha, WI 53188
262-522-2500 (Office)
262-522-2504 (Desk)
262-523-4618 (Fax)
42ewauk@pewaukee.wi.us

Appendix E

Emails to Railroad Companies for Hazardous Materials Transport Lists

From: Norris, Andrew[mailto:andrew@pewaukee.wi.us]
Sent: Monday, June 11, 2012 08:31 AM
To: David Slauson
Subject: Typical HM travel through Pewaukee

Good Morning David -

It has been a while since we met in April and I have been too busy to work on my research paper the way I would have like to work. However, now that my semester for teaching is done, I have time to get some more research accomplished.
I have looked through most of what you gave me and I appreciate the information. I feel it will be a great asset to writing my operational guideline. There is a piece of information I would like to get but understand I may not be able to get it.
I am wondering if there is a report I can get from CN about the most common types of hazardous materials being transported on the railroad lines that run through Pewaukee? I would like to use the information to create a scenario on CAMEO to work into my paper. Is it possible to get such a report?

Thank you,

Andrew Norris
Division Chief
Pewaukee Fire Department

From: David Slauson [mailto:David.Slauson@cn.ca]
Sent: Monday, June 11, 2012 9:45 AM
To: Norris, Andrew
Subject: RE: Typical HM travel through Pewaukee

Andrew,

Please fill out the attached form with a letter with the Fire Departments Letterhead on it requesting a flow study for your area. Email the completed forms back to me and we will send back a list of the 20 common most commodities that flow thru the area. It will not list the amounts or train schedules just the chemicals. It usually only takes a couple of days to get the information back.

David Slauson

Dangerous Goods Officer

CN – Network Operations

Phone: (715)345-2540 Cell: (715)210-0416

www.cn.ca

Request for Hazardous Materials Commodity Flow Information

For the area of: City and Village of Pewaukee

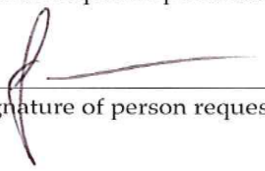
Request from: Pewaukee Fire Department
(Company/Organization/Municipality)

Contact Person: Division Chief Andrew Norris

Mailing Address: W239 N2242 Pewaukee Rd.
Waukesha, WI 53188

Telephone: 262-522-2500 Email Address: andrew@pewaukee.wi.us

By signing below, I acknowledge and agree to the terms set forth by CN for use and dissemination of the CN Hazardous Materials Commodity Flow Information. CN considers this information to be restricted information of a security sensitive nature. I thus affirm and agree that the information provided by CN in this report will be used solely for and by bona fide emergency planning and response organizations for the expressed purpose of emergency and contingency planning. This information will not be distributed in whole or in part without the expressed written permission of CN. I further acknowledge that CN will be irreparably injured by any unauthorized disclosure or attempted disclosure of the Hazardous Material Commodity Flow Information, and agree that CN will be entitled to equitable relief, including injunctive relief and specific performance, in the event of any such unauthorized disclosure or attempted disclosure.



(Signature of person requesting commodities flow information) June12, 2012 (date)

Return this completed form **with a cover letter on appropriate letterhead bearing an authorized signature** to:

Christine Gatti
Dangerous Goods Specialist
CN
935 de La Gauchetière St. West, Floor 15
Montreal, Quebec H3B 2M9

Christine.gatti@cn.ca

For CN Use Only

Date Request Received: _____

Time Period Covered: _____

Date Report Sent: _____

By: Email: _____

Regular Mail: _____

From: Norris, Andrew[mailto:andrew@pewaukee.wi.us]
Sent: Saturday, June 30, 2012 3:05 PM
To: Dale Buckholtz
Subject: CP Info

Good Afternoon Dale –

I have had a few emails from Brenda requesting information about CP Rail. I am wondering if you have any additional information about your emergency response guidelines in the event of a derailment with hazardous materials on your line that runs through Pewaukee.

I am also using the CAMEO program to create some possible incidents to help reinforce my paper about what our emergency operations will be in the event of a derailment with hazardous materials. I am wondering if CP has a list of the most common types and possible quantities of hazardous materials that run through Pewaukee?

Any information would be greatly appreciated. Feel free to contact me with any questions.

Thank you,

Andrew Norris

Division Chief of Training

Pewaukee Fire Department

W239 N2242 Pewaukee Rd.

Waukesha, WI 53188

262-522-2500 (Station One)

262-522-2504 (Desk)

262-523-4616 (Fax)

Go Green! Consider the environment before printing this e-mail

From: Dale Buckholtz [mailto:Dale_Buckholtz@cpr.ca]
Sent: Monday, July 09, 2012 10:26 AM
To: Norris, Andrew
Cc: Jim Kozey
Subject: RE: CP Info

I have included Jim Kozey within our organization. Please fill out the commodity flow request form and forward to Jim.

We can offer Railroad 101 class – similar to what you may have received from AMTRAK – only freight oriented.

When can we schedule a class as I travel to Milwaukee often.

Dale Buckholtz

Field Manager DG/Hazmat and Emergency Response

Canadian Pacific

CANADIAN PACIFIC RAILWAY

Request for Hazardous Materials Density Study

Organization Requesting Density Study: Pewaukee Fire Department

Contact Person: Andrew Norris

Phone Number: 262-522-2504

Email Address: andrew@pewaukee.wi.us

Mailing Address: W239 N2242 Pewaukee Rd.
(Street Address)
Waukesha, WI 53188
(City, State, Zip)

Geographical Description of Area for study:
City and Village of Pewaukee East/West
CP Railroad Track

Intended Use / Reason for Data Request:
I am writing a research paper for a program through the National Fire Academy. The topic is about creating an operational guideline for train derailments with Hazardous Materials Release for Pewaukee Fire Department. This request is part of the data needed for the research

Preferred method to receive report: X Email ☐ U.S. Mail ☐ Fax (Mark One)

By signing below I acknowledge and agree to the terms set forth by CPR for use and dissemination of the information contained within the CPR Hazardous Materials Density Study. I affirm that the information provided by CPR in this report will be used solely for and by bonafide emergency planning and response organizations for the expressed purpose of emergency and contingency planning. This information will not be distributed publicly in whole or in part without the expressed written permission of CPR.

Andrew Norris

(Signature of person requesting density study)

Return Completed Form to:	Jim Kozey / Chris Bunce Safety, Environment & Regulatory Affairs Canadian Pacific Railway Company Suite 700 Gulf Canada Square 401 – 9th Avenue SW Calgary, Alberta T2P 4Z4 Fax: 1-403-319-3883

For CPR Use Only

Person Responsible For Approval: _____ Date: _____

Hazardous Materials Service Support:

Date Request Received: _____

Date Report Generated: _____

Limits of Report: _____

Date Report Sent: _____

Report sent via: ☐ Email ☐ Mail ☐ Fax

Appendix F

Mutual Aid Box Alarm System (MABAS) Hazardous Materials Box Card

DEPARTMENT NAME:	BOX ALARM TYPE:	EFFECTIVE DATE:	MABAS DIVISION
Pewaukee Fire Department	Hazardous Materials	July 1, 2011	106
BOX ALARM #	**LOCATION OR AREA:**	**AUTHORIZED SIGNATURE:**	
28-16	Entire City	*Kevin I. Bierce*	

LOCAL DISPATCH AREA:

ALARM LEVEL	ENGINES	TRUCKS	SQUADS	AMBULANCES	CHIEFS	SPECIAL EQUIPMENT	CHANGE OF QUARTERS (Station #)
	Pewaukee 2861 Pewaukee 2862	Pewaukee 2871		Pewaukee 2852	Pewaukee 2810		
	Pewaukee 2863			Pewaukee 2851 Pewaukee 2853	Pewaukee 2801 Pewaukee 2802		

MABAS BOX ALARM:

ALARM LEVEL	ENGINES	TRUCKS	SQUADS	AMBULANCES	CHIEFS	SPECIAL EQUIPMENT	CHANGE OF QUARTERS (Station #)
BOX	T-Brookfield C-Brookfield	Sussex		Sussex Lisbon	Sussex	C-Waukesha SST	Lisbon Engine, Chief (1) Lannon Ambulance (1)
2ND	Lisbon (1) T-Delafield	Menomonee Falls		Lannon (1) Hartland	Lisbon (1)	Milwaukee Haz Mat Team Waukesha County Rehab	Wales/Genesee Engine, Chief (2) T-Delafield Ambulance (2)
3RD	Wales/Genesee (2) T-Waukesha	Lake Country		T-Delafield (2) New Berlin	Wales/Genesee (2)		Menomonee Falls Ambulance, Chief (1) Elm Grove Engine (1)
4TH							
5TH							

INTERDIVISIONAL REQUEST	1st Choice	2nd Choice	3rd Choice
	107	111	118

INFORMATION * Designates Local Dispatch Must Call (W/ EX) Designates extrication equipment needed

Pewaukee Station 1 - W239 N2242 Pewaukee Rd. Waukesha, WI 53188 (MABAS Knox Box next to SW Entrance)

Pewaukee Station 2 - 125 College Ave, Pewaukee, WI 53072 (MABAS Knox Box above FDC South side of Building)

Appendix G

DOT Emergency Guidebook Guide 133 and 127

ERG2008 GUIDE 133 FLAMMABLE SOLIDS

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POTENTIAL HAZARDS

FIRE OR EXPLOSION

• Flammable/combustible material.
• May be ignited by friction, heat, sparks or flames.
• Some may burn rapidly with flare burning effect.
• Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence.
• Substance may be transported in a molten form at a temperature that may be above its flash point.
• May re-ignite after fire is extinguished.

HEALTH

• Fire may produce irritating and/or toxic gases.
• Contact may cause burns to skin and eyes.
• Contact with molten substance may cause severe burns to skin and eyes.
• Runoff from fire control may cause pollution.

PUBLIC SAFETY

• CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
• As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.
• Keep unauthorized personnel away.
• Stay upwind.
• Keep out of low areas.

PROTECTIVE CLOTHING

• Wear positive pressure self-contained breathing apparatus (SCBA).
• Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill

• Consider initial downwind evacuation for at least 100 meters (330 feet).

Fire

• If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

ERG2008 GUIDE 133 FLAMMABLE SOLIDS

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EMERGENCY RESPONSE

FIRE

Small Fire

• Dry chemical, CO_2, sand, earth, water spray or regular foam.

Large Fire

• Water spray, fog or regular foam.
• Move containers from fire area if you can do it without risk.

Fire Involving Metal Pigments or Pastes (e.g. "Aluminum Paste")

• Aluminum Paste fires should be treated as a combustible metal fire. Use DRY sand, graphite powder, dry sodium chloride based extinguishers, G-1® or Met-L-X® powder. Also, see GUIDE 170.

Fire involving Tanks or Car/Trailer Loads

• Cool containers with flooding quantities of water until well after fire is out.
• For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

• Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
• ALWAYS stay away from tanks engulfed in fire.

SPILL OR LEAK

• ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
• Do not touch or walk through spilled material.

Small Dry Spill

• With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Large Spill

• Wet down with water and dike for later disposal.
• Prevent entry into waterways, sewers, basements or confined areas.

FIRST AID

• Move victim to fresh air. • Call 911 or emergency medical service.
• Give artificial respiration if victim is not breathing.
• Administer oxygen if breathing is difficult.
• Remove and isolate contaminated clothing and shoes.
• In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
• Removal of solidified molten material from skin requires medical assistance.
• Keep victim warm and quiet.
• Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

ERG2008 GUIDE 127 FLAMMABLE LIQUIDS (POLAR/WATER-MISCIBLE)

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POTENTIAL HAZARDS

FIRE OR EXPLOSION

• **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
• Vapors may form explosive mixtures with air.
• Vapors may travel to source of ignition and flash back.
• Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
• Vapor explosion hazard indoors, outdoors or in sewers.
• Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
• Runoff to sewer may create fire or explosion hazard.
• Containers may explode when heated.
• Many liquids are lighter than water.

HEALTH

• Inhalation or contact with material may irritate or burn skin and eyes.
• Fire may produce irritating, corrosive and/or toxic gases.
• Vapors may cause dizziness or suffocation.
• Runoff from fire control may cause pollution.

PUBLIC SAFETY

• **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
• As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
• Keep unauthorized personnel away.
• Stay upwind.
• Keep out of low areas.
• Ventilate closed spaces before entering.

PROTECTIVE CLOTHING

• Wear positive pressure self-contained breathing apparatus (SCBA).
• Structural firefighters' protective clothing will only provide limited protection.

EVACUATION
Large Spill
• Consider initial downwind evacuation for at least 300 meters (1000 feet).
Fire
• If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

ERG2008 GUIDE 127 FLAMMABLE LIQUIDS (POLAR/WATER-MISCIBLE)

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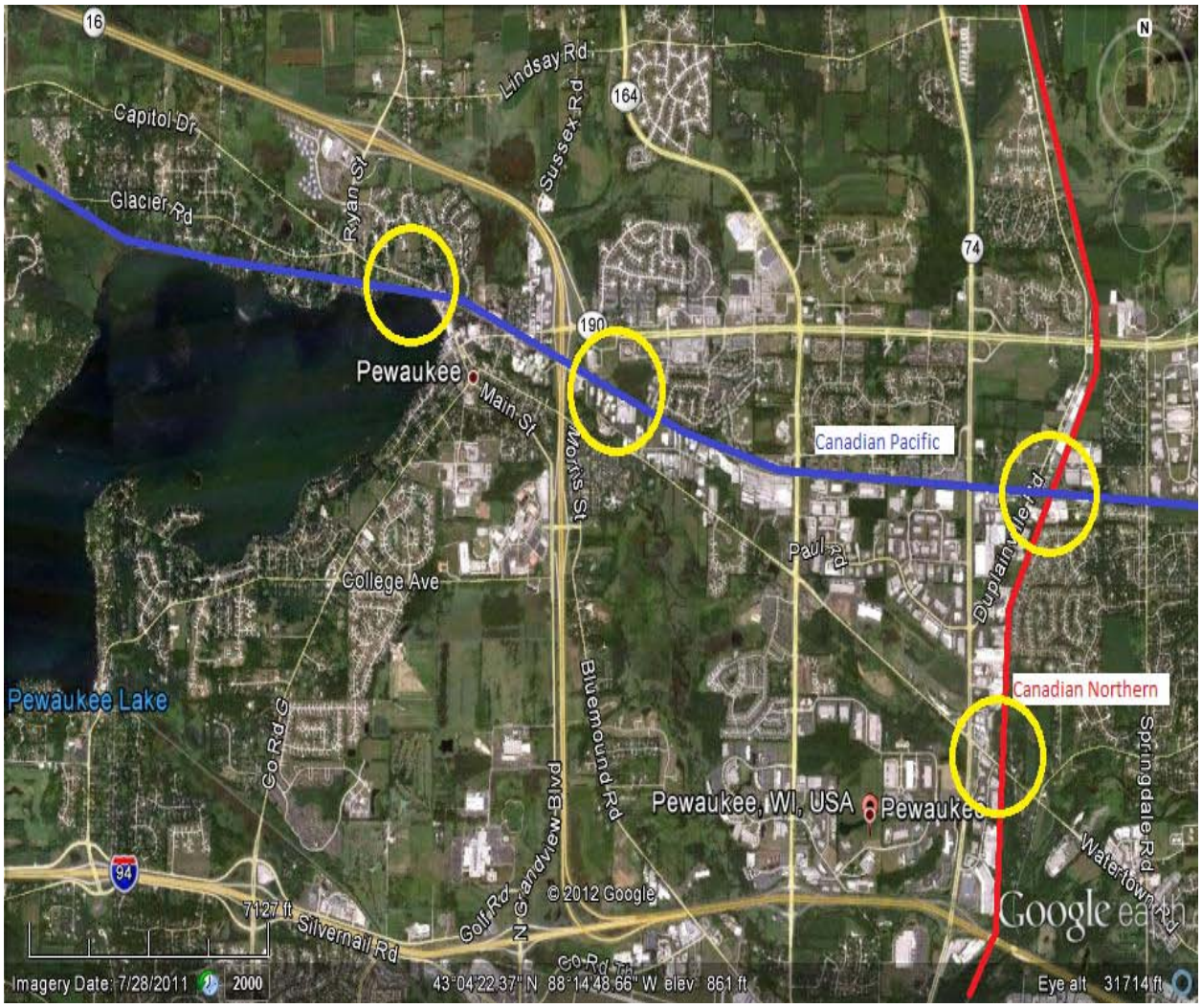
EMERGENCY RESPONSE
FIRE
CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.
Small Fire
• Dry chemical, CO_2, water spray or alcohol-resistant foam.
Large Fire
• Water spray, fog or alcohol-resistant foam.
• Use water spray or fog; do not use straight streams.
• Move containers from fire area if you can do it without risk.
Fire involving Tanks or Car/Trailer Loads
• Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
• Cool containers with flooding quantities of water until well after fire is out.
• Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
• ALWAYS stay away from tanks engulfed in fire.
• For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
SPILL OR LEAK
• ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
• All equipment used when handling the product must be grounded.
• Do not touch or walk through spilled material.
• Stop leak if you can do it without risk.
• Prevent entry into waterways, sewers, basements or confined areas.
• A vapor suppressing foam may be used to reduce vapors.
• Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
• Use clean non-sparking tools to collect absorbed material.
Large Spill
• Dike far ahead of liquid spill for later disposal.
• Water spray may reduce vapor; but may not prevent ignition in closed spaces.
FIRST AID
• Move victim to fresh air. • Call 911 or emergency medical service.
• Give artificial respiration if victim is not breathing.
• Administer oxygen if breathing is difficult.
• Remove and isolate contaminated clothing and shoes.
• In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. • Wash skin with soap and water.
• In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
• Keep victim warm and quiet.
• Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Appendix H

Map of Pewaukee with ½ Mile Simulated Evacuation Radius



Appendix I

Draft Pewaukee Fire Department Train Derailment Operating Guideline

PEWAUKEE FIRE DEPARTMENT STANDARD OPERATING GUIDELINES

Train Derailment with Hazardous Materials Release

Section: Emergency Operations
Standard Operating Guideline Number: 212-001

Date Effective: 11/01/2012
Date Updated:
Page 1 of 13

I. Purpose

A. The following guideline is to establish a standard procedure for the mitigation of a railroad train derailment with hazardous materials release and the possible evacuation of citizens due to a hazardous materials release..

II. Scope

A. This guideline will apply to all Pewaukee Fire Department personnel.

III. Responsibility

A. All officers are responsible for training their personnel and for ensuring compliance with this guideline.

B. All members have the responsibility to adequately learn and implement this guideline

C. All members shall exercise reasonable judgment in implementing this guideline.

IV. Guideline

A. Initial Response

1. The initial response to a reported train derailment will follow the Apparatus Response SOG 800-001. Ambulance 2851, Engine 2861, Shift Commander 2810 will respond from station one. Ambulance 2852 and Engine 2862 will respond from station two.
   a. All units will respond non-emergency until a staging area designated by the shift commander has been determined
      i. Units may upgrade response after the shift commander has determined the initial staging area for emergency responders.
   b. The shift commander will obtain wind speed and direction from the dispatch center. The shift commander will advise all responding units of a staging location that will be uphill and upwind of the reported derailment sight.

Train Derailment with Hazardous Materials Release

i. The staging area will be in a safe location to deploy crews to determine the extent of the derailment.

B. Site Management
1. All responding units will respond to the staging area designated by the shift commander.
a. The shift commander may choose a site farther away from the incident based on the scene size up as the incident commander approaches the scene.
2. The shift commander will establish the incident command role of the scene.
a. The shift command van (2810) will become the initial command post for the incident.
b. The shift commander will establish initial hazard zones of 500 feet per zone until confirmation from the train consist or reconnaissance (recon) team dictates larger or smaller zones.
c. The shift commander shall advise dispatch to have a police representative meet at the staging area to establish a unified command of the scene.
i. Unified command will start evacuation of the 1,000 feet around the incident site.
ii. The unified command team will request dispatch to use the reverse 911 phone system to notify residents and businesses within the 1,000 feet perimeter of the incident site to evacuate.
iii. The unified command team will advise dispatch of the evacuation point for the residents and business owners as outlined in Evacuation Procedures.
iv. Unified command will advise of routes evacuees should stay away from to allow evacuee's to depart away from the incident site.

C. Identification
1. Weather conditions
a. Unified command post will keep up to date with weather conditions from dispatch and the computer system in the command van.
b. The recon team will obtain weather conditions from the command post to establish proper entry to hot zone to determine extent of derailment and possible hazardous materials release.

Train Derailment with Hazardous Materials Release

i. The recon team will be a team of at least two firefighters in full structural PPE and SCBA.
ii. A back up team of at least two firefighters in full structural PPE plus SCBA will remain at the staging area in the cold zone.
iii. The recon teams shall also use a thermal imaging camera (TIC) and the SensIt multi gas meter as tools to determine intensity of fire, lower explosive limits (LEL), and oxygen concentration in the area.
iv. The TIC and multi gas meter will be used as tools of protection for the firefighters as they approach the site.
v. The recon team shall use binoculars to identify the type of train cars that have derailed, DOT or UN numbers, and extent of the derailment.
    a. The recon team should not directly approach the hazard area.
    b. The recon team should return to the warm zone if the LEL reaches 50% as the crew approaches the site.
    c. The team should return if the vent whistle is heard from a tank car which is on fire or has fire impinging on the car.
    d. The team should return to the warm zone if any member starts to feel ill.

2. Identification
    a. The recon team will start making their way to the derailment site to identify the extent of damage of the car(s) that have derailed.
        i. The recon team will approach the scene close enough to make general observations of the type and number of cars that have derailed, any possible UN identification numbers or train car numbers, observe type of material being released if possible, and color of flames if on fire.
        ii. The recon team will observe and listen for possible venting of pressurized train cars.
        iii. The recon team will also attempt to identify any other possible environmental concerns such as storm sewers or waterway's that may spread the material.

Train Derailment with Hazardous Materials Release

b. One of the ambulance crews will drive to the train locomotive to meet with the train conductor if the locomotive is not involved or within the hot zone.
   i. Contact shall be maintained with the railroad company and the conductor through the dispatch center if possible.
   ii. Command shall update the ambulance crew of the location of the conductor as the ambulance attempts to locate the conductor.

c. The ambulance crew shall ensure the conductor has the train consist of the train and transport the conductor back to the command post.
   i. Command will then use the trains consist with information obtained from the recon team to determine resources needed and if a larger evacuation will need to be conducted.
   ii. Command will initially use recommendations from the DOT Emergency Response Guidebook to determine incident hazard zones and evacuation distances.

d. Command will determine if the location of the command post will need to be relocated.
   i. Command will choose a location outside of the reestablished hot and warm zone.
   ii. The location will need to be large enough to expand on scene command operations.
   iii. Command will need to establish a Level 2 staging area for apparatus and personnel that will be requested to the scene.

e. Command will request a callback of off duty firefighters and chief officers through dispatch.
   i. Command may also choose to upgrade the incident to a box alarm level for MABAS box 28-16.

3. Notifications

a. Command will choose to upgrade the alarm level based on needs of the scene and confirmation of a hazardous materials release.
   i. Command will fill out the notification request form for the Waukesha Level B Hazardous Materials team and make contact with the City of Waukesha Shift Commander per City of Waukesha SOG 1201-001.
   ii. The City of Waukesha Shift Commander will advise which level type of team will respond based on information

Train Derailment with Hazardous Materials Release

provided by the Unified Command team and SOG 1201-001.

b. Command shall request the dispatch center to have the Waukesha County Emergency Management Coordinator respond to the scene.
c. The Dangerous Goods Officer for the rail line affected by the derailment shall be contacted by the dispatch center and the railroad dispatch center.
    i. Command will request the Dangerous Goods Officer to notify their air quality monitoring team to respond to the scene.
    ii. The train company shall also be notified to have appropriate emergency response personnel respond to the scene.
    iii. Command is to receive an estimated time of arrival for the Dangerous Goods Officer or appropriate personnel to the scene.
    iv. Command will direct the dispatch center to have any railroad company personnel respond to the command post.
d. It is the responsibility of the railroad track owner to make notification to the National Response Center and any other federal agency notification based on 49 CFR 171.15 requirements.
e. The Waukesha County Emergency Management Coordinator will make the determination if additional State of Wisconsin Agencies will need to be notified or requested to the scene.
f. The unified command team will determine if the Southeast Wisconsin Incident Management Team should be activated to assist with management of the incident.
    i. Unified Command should have the team notified of the possible need for assistance.

D. Hazards Risk Assessment and Unified Command Team Establishment
1. The recon team shall be decontaminated upon return to the warm zone.
    a. The backup team will use a hose line with brushes to perform a decontamination (decon) of the recon team.
    b. The recon team structural gear and SCBA will be left in the warm zone where the decon site will be set up for the hazardous materials teams.
    c. One ambulance will be set up as a rehabilitation (rehab) team for all teams entering and leaving the hot and warm zones.
        i. The recon team will report to rehab for medical evaluation.

Train Derailment with Hazardous Materials Release

2. The backup team will become the decon team for all teams entering and leaving the hot and warm zones.
    a. The decon team will obtain the decon kit from the Waukesha Hazardous Materials (Haz Mat) team upon their arrival.
3. Responding mutual aid units from the box alarm level may be utilized for the following scene requirements:
    a. Medical evaluation team.
    b. Decon team.
    c. Evacuation team should the need arise to make door to door notification.
    d. Site security at roadways to allow people out of the evacuated area but not back into the area.
    e. Evacuation point medical evaluations.
        i. Evacuee's may require medical evaluations based on possible exposure to hazardous materials
    f. Staffing of Pewaukee Fire Stations for any additional calls for service.
    g. Fill command position roles in the Unified Command Structure.
4. A group under operations called Haz Mat Group will be established upon arrival of the Waukesha Haz Mat team.
5. An entry team will be established from the Waukesha Haz Mat team to conduct a secondary recon of the derailed train cars.
    a. The team will conduct a survey of the cars and site to determine the needs to mitigate the incident. The team will look at:
        i. Needs for stopping the release.
        ii. Need for Milwaukee Level A Haz Mat team
        iii. Air monitoring to determine level of air contamination for further evacuation needs.
        iv. Estimate quantity of material that has been released.
        v. Level of personal protection equipment (PPE) needs beyond Waukesha Haz Mat team abilities.
        vi. Assessment of fire protection measures in place.

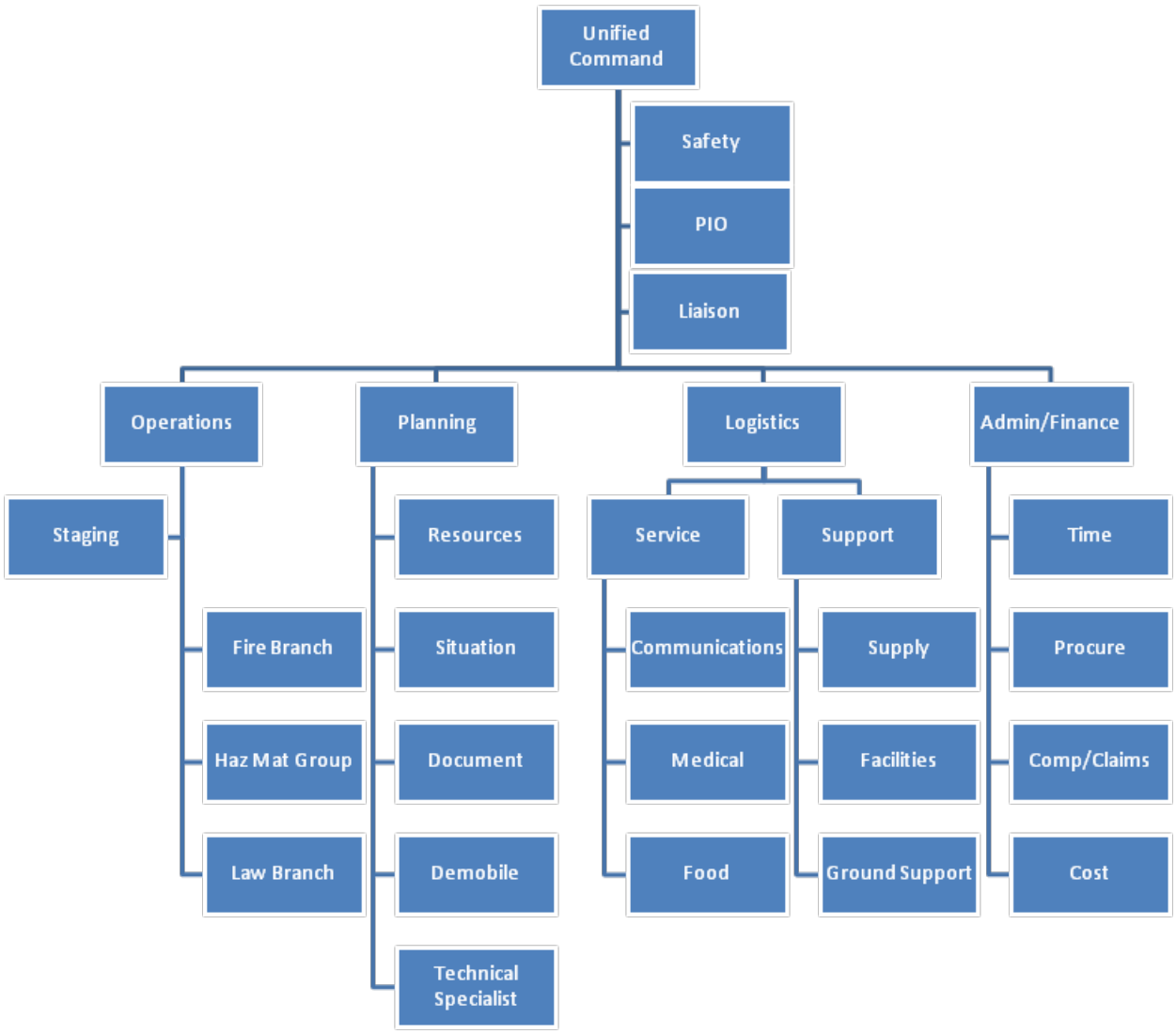
    b. The unified command team will reevaluate and determine tactical strategies and tactics upon reports received from the Waukesha recon team.
    c. Command may choose to upgrade the MABAS box to the second alarm level to have the Milwaukee Level A Haz Mat team respond.

Train Derailment with Hazardous Materials Release

Section: Emergency Operations
Standard Operating Guideline Number: 212-001

Date Effective: 11/01/2012
Date Updated:

Sample Unified Command Structure



6. The Unified Command team shall have the Operations, Safety, Liaison, and PIO positions filled for the incident.
   a. Operations shall have overall responsibilities of enacting all tactical plans established for the incident.

Train Derailment with Hazardous Materials Release

i. Evacuation procedures, fire control, any rescue and medical needs are some of the areas of consideration that may need to be addressed.
ii. Safety is always the number one concern for emergency responders and the public alike.

b. The Fire Branch shall be responsible for all fire and EMS crews on scene.
   i. The Fire Branch director will determine how to establish span of control for crews assigned.
   ii. The medical team for on scene personnel will report to the Fire Branch Director until a Logistics Chief is established.

c. The Law Branch shall be responsible for all law enforcement officers assisting at the scene.
   i. The Law Branch Director will determine how to establish span of control for officers assigned.
   ii. The Law Branch Director will initially be responsible for investigation teams assigned.
   iii. A separate branch may be established under Operations dependent on amount of investigation teams assigned to the incident.

d. The Haz Mat Group Director will be assigned to the Waukesha Haz Mat team supervisor.
   i. The Haz Mat Group Director will determine Group needs as the incident progresses.

e. The Safety Officer will need assistant deputies to accomplish proper safety procedures and monitoring of all operations on the scene.
   i. All responders' tactical operations including entry teams, fire control crews, evacuation crews, medical crews, and command post safety are some of the areas of concern.
   ii. The safety officer will be responsible for preparing the safety plan and executing evaluation of the plan under the Incident Action Plan.

f. The liaison officer will coordinate all outside agencies response to the scene.
   i. The liaison officer will have contact with all railroad agencies coming to the scene.

Train Derailment with Hazardous Materials Release

ii. The officer will coordinate agencies responding as requested by the Waukesha County Emergency Manager and any federal agencies that may respond.
iii. The officer will coordinate crews responding for the stabilization of the cars plus any cleaning and/or recovery crews that respond.
iv. Red Cross and evacuation shelter points of contact will communicate efforts and requests through the liaison officer.

g. A public information officer (PIO) will be responsible for communicating efforts and any other pertinent information to the media or public.
i. All media releases will be approved by the unified command team prior to release.
ii. The PIO will contact all media agencies to establish a media release site that will be away from the danger zones of the incident.
iii. The PIO will establish time lines for releases with the media.
iv. The PIO will establish areas where the media may go for view of the site that allows for safe viewing and are out of the way of the operations of the crews.

7. Planning, Logistics, and Finance may not be established on the scene of the incident.
a. The unified command team shall request the City or Village of Pewaukee to activate the Emergency Operations Center (EOC) upon determination of a pro longed emergency incident.
b. A pro longed emergency incident involving a train derailment would include the release of a hazardous material, evacuation, and/or uncontrolled fire with potential for sudden hazardous materials release.
c. The EOC shall take over the responsibility of establishing a Planning, Logistics, and Finance section for the purpose of support to the Unified Command team at the site.
i. Representatives from the emergency scene may be transferred to the EOC to assist with the Planning section based on knowledge of the ongoing scene management.

8. Coordination of state and federal agencies shall be accomplished through the Waukesha County Emergency Manager.

Train Derailment with Hazardous Materials Release

a. The Waukesha County Emergency Manager through discussions with the City or Village EOC will determine if the Waukesha County EOC shall be established.
b. City or Village EOC staff will transfer to the County EOC upon activation of the County EOC.

E. Operational Guideline Assistance
1. A copy of the Hazardous Materials Managing the Incident Field Operations Guide by Armando Bevelacqua, Gregory Noll, and Michael Hildebrand (2005) will be available in the shift commander van (2810).
a. The book will be a guide for positional reminders for managing the scene and creating an Incident Action Plan (IAP) for mitigating the incident.
b. The guide provides reminders how to safely approach the scene, establish strategies and tactics, evaluate scene operations, and also provides a list of contacts for assistance with handling a hazardous materials release.
2. A copy of the Canadian Northern Emergency Response Plan will also be available in the van.
a. The plan provides a framework about how Canadian Northern will respond and assist with a train derailment on their tracks.
b. The plan provides a step by step guide for how CN will handle a derailment and hazardous materials release.
i. The plan also provides contact information for their company representatives who would respond to a derailment.
ii. The plan describes their responsibilities for mitigation and recovery of the derailment.
c. The plan can be used as an additional tool for guidance if there is a derailment and hazardous materials release on the Canadian Pacific railroad.
i. Canadian Pacific did not provide a detailed response plan for use by Pewaukee Fire Department.

F. Evacuation Procedures
1. Evacuation procedures as set forth in this guideline follow the City of Pewaukee Emergency Operations Plan Section E – Evacuation and Shelter created March 21, 2010.
2. Unified command will need to determine the type of level of evacuation needed as defined by the City of Pewaukee Emergency Operations Plan.

Train Derailment with Hazardous Materials Release

a. A Level 1 Evacuation will consist of a localized evacuation for a brief period of time which would require limited displacement of individuals and would be handled with the personnel and equipment immediately available. (Ex: house fire, tactical situation, or small hazardous materials release.)
b. A Level 2 Evacuation involves a more severe incident which would require the partial activation of the EOC for supply and cost tracking, but displaced individuals could be sheltered without county assistance for a limited time. (Ex: medium hazardous materials release, large fire or tactical incident, or gas line break.)
c. A Level 3 Evacuation will be utilized when a severe disaster or emergency occurs that would require County assistance and management from the full EOC. This evacuation would entail large numbers of displaced individuals for an extended or unknown period of time and may require the use of site access management. (Ex: natural disaster, large hazardous materials release, or commercial transportation disaster.)

3. A Level 1 evacuation may be handled by on scene personnel.
   a. The evacuation of a 500 foot radius may be completed by utilizing the community notification procedures through the dispatch center as well as through mutual aid fire and law enforcement agencies conducting door to door notifications.
4. A Level 2 or 3 evacuation would involve a larger area to be evacuated and thus more resources along with the community notification procedures from the dispatch center would need to be utilized.
   a. Command will contact the dispatch center to notify the South East region of the Red Cross to respond to a designated shelter to be determined from the list of shelters in paragraph 8 of this section.
   b. Command will also have the dispatch center contact the Humane Animal Welfare Society (HAWS) to respond to the command post to work with evacuation teams with evacuating pets.
      i. Elmbrook Humane Society and Wisconsin Humane Society will also be notified to provide assistance at the direction of the HAWS representative.
5. Unified command will need to decide whether to have the areas affected complete a shelter in place or evacuate to a remote shelter.
   a. The community notification system will assist with providing the following directions for a shelter in place evacuation:
      i. All people and pets should go inside their home or business

Train Derailment with Hazardous Materials Release

ii. Close and lock all windows and doors to the outside.
iii. Turn off all window fans, vents, exhaust fans, furnaces, air conditioners, or fireplace dampers.
iv. Never use the basement, as most chemicals are heavier than air.
v. In the shelter room, seal cracks around the doors and windows by taping plastic over windows, vents, range hoods, etc.
vi. Do not use the telephone as someone may call with information.
vii. Don't use elevators. They bring air into a building when used.
viii. Monitor the EAS System on your radio or television for further information.
ix. If you are unable to seal your residence or are having difficulties, contact 911 for assistance.

6. A mass evacuation of multiple people poses inherent risks and hazards such as:
   a. Proper notification of people in a timely manner.
   b. Placing emergency personnel in a possible unsafe atmosphere.
   c. People not wanting to leave.
   d. People wishing to pack belongings not knowing when they will return.
   e. People asking questions about security of their home and belongings.
   f. Shelters being prepared for first arriving evacuee's.
   g. Shelters being notified of evacuees being sent to them.
   h. Medical concerns for people who evacuated through a hazardous environment.
   i. Safe and open routes to evacuate the area.
7. Mass evacuation of citizens will require numerous law and fire personnel to conduct door to door notifications and secure areas of evacuation.
   a. Consideration for a mass evacuation will need to encompass location of the evacuation.
   b. Nursing homes and businesses will and may require mass transit to assist with the evacuation process.
   c. Evacuation teams will require a plan of action to direct evacuee's from their home or business.

Train Derailment with Hazardous Materials Release

i. Evacuation routes will need to be established to prevent citizens from going toward incident site.
ii. Use of the City engineering department GIS system will assist with evacuation routes.
iii. Fire crews with full PPE and SCBA shall be utilized to evacuate areas with the hot zone.

d. Evacuation teams shall be given three different tags to be used to indicate contact with a site.
i. The tag will be placed on the front door handle to indicate contact made.
ii. A Green tag will mean home has been cleared.
iii. A Yellow tag will mean no answer or no one in building to answer.
iv. A Red tag will mean person refused to evacuate.

e. Evacuation crews will not argue with refusal citizens or force them to leave.
i. Crews will attempt a second time to convince citizen to evacuate then move on to next building.
ii. Crews will ensure the home has a red tag to ensure no duplication of effort and notification made.

f. Crews will then become part of the perimeter security teams to not allow people to enter the evacuated area until approved by command.
i. Crews will determine best control sites with help by the city engineering GIS system for staging equipment in the cold zones as established by command.

8. The following locations are available for shelters for evacuees. The list has been approved and is part of the City of Pewaukee EOP.
a. Horizon Elementary School— 458 Lake Street 691-2100
b. Asa Clark Middle School — 472 Lake Street..... 691-2100
c. Pewaukee High School — 510 Lake Street..... 691-2100
d. WCTC—800 Main Street 691-5566
e. Galilee Lutheran Church — N24 W26430 Crestview Drive….. 691-2380
f. Queen of Apostles Church — N35 W23360 Capitol Drive 691-1535
g. Spring Creek Church — N35 W22000 Capitol Drive 695-2211
h. Pewaukee Public Library — 210 Main Street 691-5670