



Application of Technology to Transportation Operations in Biohazard Situations

Task 3: Workshop Summary

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EXECUTIVE SUMMARY

This document summarizes the results of a workshop held on July 18, 2005, at the University of Wisconsin at Madison's Pyle Center. This workshop, which was co-sponsored by the U.S. Department of Transportation's Intelligent Transportation Systems (ITS) Joint Program Office, was conducted as part of the Federal Highway Administration project titled *Application of Technology to Transportation Operations in Biohazard Situations*.

This workshop was held: (1) to obtain information from a cross-section of transportation, public safety, emergency management, public health, and veterinary medicine officials regarding expected roles, responsibilities, activities, and needs during response to biohazard emergencies, and (2) to validate a Draft Operational Concept prepared for State Departments of Transportation (DOTs) to support their activities to develop a viable biohazard response capability.

The workshop took place only days after the bombings of the subway and a double-decker bus in London. In his opening remarks, Wisconsin Secretary of Transportation, Frank Busalacchi, noted the tragic events in London and said that they served as a reminder that transportation agencies and organizations play critical roles in responding to terrorist attacks. Secretary Busalacchi acknowledged that an effective response to a terrorist incident requires planning, preparedness, and teamwork across institutional and geographic boundaries.

To obtain information on existing planning, preparedness and response activities for addressing biohazard emergencies, workshop participants were first divided into break-out sessions to discuss the potential role of transportation agencies in the response to three different biohazard scenarios. All participants then had an opportunity to discuss each scenario after hearing short presentations by members of each break-out session. During the workshop's final session, participants provided their comments and recommendations on the project's Draft Transportation Biohazard Operational Concept.

Results from the workshop will be used to create sample materials and representative scenarios to support project deliverables, including the Final Transportation Biohazard Operational Concept, and an online or CD-ROM learning tool.

Some common themes emerged from the workshop discussions, including the following:

- The roles required of transportation agencies will differ significantly depending on the nature and extent of the biohazard incident.
- Transportation agencies currently have the capability to perform some of the required roles, but not all of the necessary planning and formal agreements needed to facilitate the performance of those roles have been completed.
- Transportation agencies utilizing the services of private contractors need to consider addressing the use of the contractors' assets during a biohazard incident or other emergency in the service agreements with those contractors.

- To enhance public control and reduce panic, participants identified the need for accurate and timely public information and mechanisms to transmit this information to affected and potentially affected citizens. Transportation agencies indicated that emergency management personnel in their communities may not be aware of available transportation resources for communicating with the public.
- Transportation agencies were concerned about being notified early and incorporated into the local, regional, and state decision-making process to provide advice and recommendations regarding transportation aspects of the response.
- Transportation agencies noted that agreements and protocols for working with law enforcement to enforce travel restrictions, curfews, and quarantines, and to support voluntary travel restrictions or “snow day” conditions have not been fully developed.
- Participants expressed concerns about the potential impacts of illness and absenteeism on their capabilities to implement emergency plans and carry out expected activities.
- Transportation agencies identified resources that they may have available to support the U.S. Department of Agriculture during issuance of a nationwide stop movement order for the shipment of livestock.
- Participants thought that ITS technologies could improve the performance of transportation agencies during a biohazard event, but those technologies are not currently available to all areas.

INTRODUCTION

General Information

The FHWA Biohazards workshop was held on July 18, 2005, at the University of Wisconsin-Madison's Pyle Center in Madison. The workshop was attended by approximately 40 representatives of federal, state, and local agencies and University transportation research organizations. A list of registered attendees is included as Appendix I.

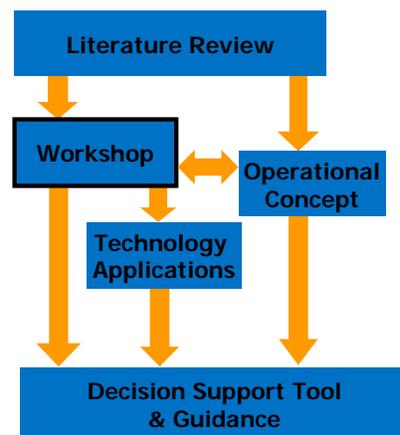
Project Context

This workshop is part of a larger project that the Federal Highway Administration (FHWA) and the Intelligent Transportation Systems (ITS) Joint Program Office, in partnership with the American Association of State Highway and Transportation Officials (AASHTO), are undertaking to evaluate the roles of transportation agencies during biohazard events. The project will develop recommendations on how these agencies can apply advanced operational methods and ITS technology to improve their performance during biohazard emergencies.

The findings from the July workshop will inform other project outputs, including an operational concept, a technology application plan, a decision-support tool for transportation agencies, and guidance on planning for and responding to biohazard events. A brief description of each of these deliverables appears below:

- *Operational Concept.* The operational concept will support the efforts of state DOTs in defining their organizational structure, roles and responsibilities, processes, and policies for managing a biohazard event. It will clarify the transportation functions to be performed during a biohazard situation and provide a blueprint for building consensus among transportation, emergency management, public health, agriculture and veterinary medicine, and public safety stakeholders on critical issues involved in biohazard events. This includes identification of required planning and response activities; multi-jurisdictional mutual aid and operating agreements; selection of operational strategies, standards, protocols; communications interfaces; and the application of technology. The operational concept builds on existing transportation and community emergency response plans, emergency response procedures, training, drills and exercises. It also builds on recommendations from the public health, agriculture, and veterinary medicine communities regarding how best to manage these types of emergencies.
- *Technology Application Plan.* Based on the operational concept and findings from prior tasks, the project will analyze how technology can be applied to enhance the effectiveness of transportation management during a biohazard situation. The project

Biohazards Project Structure



will focus on existing technologies and devices, but it will also examine new technology solutions that have not yet widely penetrated the transportation market.

- *Learning Tool.* This resource synthesizes the information and findings from the other project outputs and presents them in an engaging format suitable for distribution via CD-ROM or the U.S. DOT website. This tool provides a way for transportation professionals to learn about biohazards and the steps transportation agencies can take to prevent, prepare for, respond to, and recover from biohazard incidents.
- *Final Report.* The Final Report includes a set of recommended practices for state and local transportation agencies, recommendations to FHWA on how to assist state and local transportation agencies, and areas for additional research. The recommended practices for transportation agencies are organized by phases of the emergency management process.

Purpose and Structure of the Workshop

The objective of this workshop was to bring together representatives from the agencies most likely to respond to a biohazard event in the State of Wisconsin, and to take them through a set of biohazard scenarios to identify roles, responsibilities, needs, available resources, and current practices. Officials from relevant Federal agencies were also in attendance.

Break-out Sessions. After the welcome and introduction, participants were divided into three groups. Supported by a facilitator, each group discussed a different biohazard scenario. At the conclusion of the break-out sessions, the three groups met in a plenary session for group reports and discussion among the entire assembly of participants.

Discussion of Operational Concept. During the workshop's last session, participants reviewed relevant sections of a draft transportation biohazard operational concept and offered feedback for strengthening sections to reflect the outcomes of the facilitated break-out sessions and subsequent discussion.

The full workshop schedule can be found on the next page.

WORKSHOP SCHEDULE

Introduction and Purpose

- 7:45 – 8:30** **Sign-in / Breakfast**
- 8:30 – 8:40** **Opening Remarks by WI DOT Secretary Frank Busalacchi**
- 8:40 – 8:50** **Introduction / Administrative Issues**
- 8:50 – 9:05** **Project Summary and Context**
- Goals and products
 - Current status

Scenarios

- 9:05 – 9:20** **Scenario Briefings**
- 9:20 – 10:45** **Break-out Sessions**
Attendees were divided into three groups, each representing a mix of functions, to discuss different biohazard scenarios.
- 10:45 – 11:00** **Break**
- 11:00 – 11:45** **Discussion of First Scenario**
Began with a presentation by members of the break-out group.
- 11:45 – 12:30** **Lunch**
- 12:30– 1:15** **Discussion of Second Scenario**
Began with a presentation by members of the break-out group.
- 1:15 – 2:00** **Discussion of Third Scenario**
Began with a presentation by members of the break-out group.
- 2:00 – 2:15** **Break**

Debrief & Operational Concept Feedback

- 2:15 – 2:45** **Briefing on Draft Biohazard Operational Concept**
- 2:45 – 3:45** **Impact of Scenario Responses on Operational Concept**
- Transportation Situations and Assumptions
 - Transportation Activities (by phases of response)
 - Other Considerations
- 3:45 – 4:00** **Wrap-up**

OVERVIEW OF SCENARIOS

Workshop participants were divided into three groups to discuss three different biohazard scenarios that were selected to demonstrate the wide range of policy responses that a biohazard incident could require. In working through the scenarios, each group was charged with responding to following four questions:

1. What are the expectations for transportation support during the scenario identified by external responders (public health, public safety agencies, emergency operations center, National Guard, departments of agriculture/veterinary services)?
2. What are the activities actually performed by transportation responders during the scenario? Do these activities address the expectations of the external responders?
3. How do transportation agencies work with the external agencies to prioritize activities to be performed? Are transportation resources and capabilities sufficient to meet the needs of external agencies within the required timeframe?
4. How do transportation agencies use communications and other technologies to support response to the scenario?

The three scenarios are presented below. A summary of the discussion prompted by each scenario can be found after each scenario description.

SCENARIO 1: OVERT (DETECTED) RELEASE OF A BIOHAZARD AGENT IN AN OPEN OUTDOOR FACILITY

October 2005

As a result of increased volume of intelligence chatter, the Homeland Security Advisory System level has been raised to Orange, indicating a “high risk of terrorist attacks.” The State’s law enforcement agencies, which are already implementing orange-level security measures, are considering instituting additional security measures at government buildings, airports, water supply systems, and other critical facilities. While the information warrants an change in the Homeland Security Advisory System, no specific method of attack or potential target has been identified.

It is Homecoming weekend (Oct. 21-23, 2005) at the University of Wisconsin-Madison. On Saturday afternoon, it is partly cloudy and 50 degrees, with temperatures expected to drop into the 40s by evening. Approximately 75,000 fans are gathered at Camp Randall Stadium to watch the Badgers take on the Purdue Boilermakers. During the second quarter, CNN, ESPN, and other television networks begin broadcasting stories of possible terrorist incidents at three college football games along the East Coast.



Shortly after the beginning of the broadcasts, a small crop-duster plane flies low over the Camp Randall Stadium, drawing the attention of the crowd away from the game. By this time, fans with radio headphones have heard news reports of the incidents at the other football stadiums and are now alerting others and rapidly leaving the stands.

Discussion Summary

The participants in the break-out session identified a number of likely responses to the scenario. Most of the actions described below are in chronological order; however, some actions would take place concurrently. Not all of these actions would require support from transportation agencies:

- Isolation and evacuation of the exposed population,
- Investigation into the type of agent and range of contamination,
- Creation of transportation corridors for delivery of emergency supplies and first responders,
- Delivery of vaccine or prophylaxis to smaller distribution centers, and
- Transport of exposed population to and from vaccine/prophylaxis distribution centers.

Transportation's Role

Participants noted that the role of transportation agencies would focus mainly on the movement of the exposed population out of the affected area and on the movement of medical supplies and emergency management personnel throughout the area. Support from law enforcement, district health authorities, and hazardous materials decontamination authorities would be needed.

The first major role of transportation officials would be the creation of dedicated transportation corridors for emergency management personnel. The group thought that the single largest tool at their disposal was the use of the Civil Air Patrol airplane that would be already in the air prior to the attack. With the help of the airplane, traffic patterns could be monitored from the air. A question was raised regarding the potential grounding of all aircraft in the area after such an attack and the possible loss of that asset. Some participants also expressed concerns regarding the use of the Route 151 corridor because of its current congestion levels and construction delays.

The next transportation-related action identified by the break-out session participants was the delivery of vaccine or prophylaxis to smaller distribution centers. The first logistical concern was that vaccine supplies would likely need to be refrigerated during transport. Acquiring refrigerated vehicles was not deemed to be a problem; however, there was some concern that contracts might not be in place with private carriers to transport the vaccine in an emergency situation. The second logistical concern was choosing locations for the distribution of vaccine or prophylaxis. One participant related a story from a previous training exercise in which fire stations were chosen as the distribution points, but the stations had difficulty dealing with the ensuing volume of traffic. Other suggestions for distribution facilities included schools and community centers.

Participants also discussed the transport of the exposed population to and from the vaccine distribution facilities. Participants believed that contracts are not currently in place with local transportation groups (e.g., Madison Metro, private fleet operators) to provide such services in the event of a biohazard attack.

Potential Role of ITS Technology to Facilitate Response

Participants identified a number of ITS technologies that they believed would improve the response to this scenario. Most of the technologies cited related to traffic management and dissemination of information to the public. To facilitate the flow of traffic, participants said that greater use of closed-circuit television (CCTV) cameras and traffic-signal controls would be useful tools in this type of scenario. Participants were concerned about the availability of funding needed to acquire these technologies for the Madison area.

The use of highway variable message signs was suggested as a method of providing information to the general public. It was generally believed that a sufficient number of signs existed for this scenario. Questions arose about the control and use of variable message signs, because they are owned by private businesses in Wisconsin. Participants questioned whether the contracts with these firms would enable the signs to be deployed in a timely manner.

Discussion of Scenario with All Workshop Participants

During discussion of the scenario with the full group of workshop participants, several additional points were raised. There was a concern about a possible disconnect between those individuals monitoring the traffic situation and those in charge of making decisions about response to the emergency. Madison does not have a dedicated traffic control center, so participants were unsure who would fulfill the role of monitoring the traffic network and providing information to decision-makers.

A question was also asked regarding the transition of decision-making from the stadium control center to a control center somewhere outside of the contaminated area. Participants agreed that because those in the stadium control center were probably contaminated by the attack, control should be passed on to a separate decision-making group. However, there was no discussion of how that would happen.

Another question arose concerning the possibility of decontaminating the exposed population. The participants of the break-out session had dismissed the idea of mass decontamination due to the size of the exposed population and the time-consuming nature of decontamination. A representative of the regional health care authority mentioned that hospital decontamination facilities could only process six people per hour. It was generally agreed that decontamination facilities would be used for health-care providers and first responders rather than the general population.

A final point that was brought up by a security representative of the University of Wisconsin was that the stadium has no formal transportation plan in the event of an emergency at the stadium. He mentioned that he would be working with others at the university to discuss inclusion of a transportation component into their emergency management plan for the stadium.

Break-Out Session Participants

Teresa Adams
Tom Anderson
Hussain Bahia
Janet Benini
Keith Gates
Seth Johnson
Jayne Meyer
Michael Newton
Tom Strock
Wes Voge
Sean Casey (facilitator)
Andrew Amey (notes)

SCENARIO 2: COVERT (UNDETECTED) RELEASE OF A COMMUNICABLE AGENT

November 2005

Federal intelligence agencies are currently monitoring several threats to determine their credibility. As a result of increased volume of intelligence chatter, the Homeland Security Advisory System level has been raised to Orange, indicating a “high risk of terrorist attacks.” The State’s law enforcement agencies, which are already implementing orange-level security measures, are considering instituting additional security measures at government buildings, airports, water supply systems, and other critical facilities.

On November 15, hospitals in and around the Madison area noticed a sharp increase in patients complaining of flu-like symptom. The hospital with the most cases is at the University of Wisconsin. The numbers increase sharply over the next 24 hours, and by the time of the nightly news it is the major story in local media markets. Over 1,000 patients have complained of the “flu” and over a dozen deaths are associated with it. Media reports speculate on the cause of the outbreak, but nothing is certain. On November 16, there is a sharp increase in absenteeism from local schools, and businesses, apparently as people try to isolate themselves and their families from exposure to an unknown illness.



Also on November 16, the initial sputum culture results from the earliest samples collected are available, and the findings are initially positive for *Yersinia pestis* – plague. Samples are immediately sent to the State Laboratory of Hygiene for further analysis and confirmation. Given the nature of pathogen and the number of people potentially exposed, it seems highly likely that this is an intentional act of terrorism. The FBI is called in and they, along with law enforcement agencies and epidemiologists, begin an exhaustive search to try to identify the source of the plague.

By the morning of November 17, medical facilities in the area are stretched beyond capacity. All report a shortage of medical supplies, especially ventilators. As news of the crisis spreads, everyday life in Madison and other nearby communities stops completely. Many businesses are closed. Some municipal services (e.g., trash pick-up, public transportation) are disrupted because of a lack of staff. Large numbers of people are fleeing the area by whatever means available. Others converge on medical facilities seeking “vaccines.”

Discussion Summary

Participants in the break-out session identified the following list of actions as likely responses to the scenario described above. Not all of these actions would require support from transportation agencies:

- Identification of biohazard event (recognizing that patients are presenting symptoms of plague versus other regular high occurrence of respiratory illnesses or a natural outbreak of avian influenza);
- Initial public health coordination, tracking and situation assessment;
- Management of patient surges at hospitals (re-configuring to provide additional beds and isolation rooms, and obtaining additional ventilators, medicine, etc.);
- Notification and activation of county, regional, and state Emergency Operations Centers (EOCs);
- Declaration of state of emergency and request for federal response;
- Request to CDC to release Strategic National Stockpile (SNS);
- Activation of incident command system and command centers;
- Distribution of medical equipment and SNS supplies;
- Public information campaign;
- Support for decisions from public health agencies (voluntary restrictions, quarantine, etc.);
- Criminal investigation;
- Activation of National Guard;
- Establishment of statewide public health advisory network;
- Management of “worried well,”
- Care of special populations (e.g., elderly, disabled, incarcerated);
- Assessment of staffing of public safety officers:
 - Roles and responsibilities of law enforcement during quarantine and travel restriction,
 - Staffing rotations and assignments,
 - Providing information on personal protection (standard medical protocols and hygiene regimen),
 - Posting officers at hospital rooms – isolation and mini-quarantine orders,
 - Posting officers at pharmacies and treatment/distribution centers,
 - Protecting SNS resources, and
 - Managing desertion rates and fear.
- Transport of infectious materials (to labs and between labs);
- Mobility restriction/quarantine of affected areas:
 - Modeling of transportation system to identify chokepoints and change traffic signal timing,
 - Alternate routing around affected areas,
 - Provision of food and supplies to affected areas, and
 - Closing of ports on western Lake Michigan (U.S. Coast Guard).
- Establish liaison with media;
- Establishment of official website for distribution of information;
- Closing of public transit systems, suspension of air travel;
- Utilization of U.S. Postal Service to deliver information and/or medications; and
- Activation of Reverse 911.

Transportation's Role

Discussion of this scenario focused initially on the hospitals' response to the situation. Several challenges were identified, including the ability to identify the outbreak, and the capacity to handle multiple hotspots within the State of Wisconsin. While the participants were not certain that a full quarantine of the city or a section of the city would be necessary, the process for ordering and carrying out a quarantine was discussed at length.

Participants noted that under these conditions, the local transportation agencies and law enforcement would need to restrict access into and out of certain affected areas, provide alternative routing for freight transportation around the affected area, while providing continuing access for supplies and personnel into the affected area. Orders could be issued to close or restrict the ports on Lake Michigan and to restrict air travel into and out of the city. Participants also discussed the enforcement of voluntary travel restrictions or curfews, and how the transportation network could be configured to support these restrictions.

Participants agreed that some transportation role might be required to transport patients not affected by the outbreak to overflow locations. Transit vehicles could be used to transport affected persons as well, although decontamination would be required later. Transport of patients could also involve escorts or road closures.

Regarding the delivery of supplies and personnel to quarantine areas, participants suggested that oversize or overweight vehicles owned by transportation agencies would be useful. The U.S. Postal Service was suggested as a potential network for delivery of information and supplies to individual households. There was an assumption that with appropriate public information and reassurance, many people might voluntarily isolate themselves at home during this event. Under quarantine conditions, of course, citizens would be restricted to their homes.

Potential Role of ITS Technology to Facilitate Response

Participants generally agreed that the tools necessary to provide traffic management and public information were available. Communications technologies that were mentioned included reverse 911, 511, Amber Alert, and Highway Advisory Radio. It was noted that interoperability of the communications systems used by emergency responders would be very important.

Participants also suggested that transportation system models and traffic monitoring technology could be used to develop and monitor alternate routes around quarantine areas.

Discussion of Scenario with All Workshop Participants

It was suggested that the U.S. Postal Service's response plans for biohazard incidents could serve as models for broader efforts. Mark Spellman of the U.S. Postal Inspection Service briefly described the efforts of the U.S. Postal Service to prepare for biohazard incidents at its mail distribution facilities. Mr. Spellman said that the Postal Service is planning to put biohazard sensors in each of its roughly 240 distribution facilities by the end of 2005. It has also conducted

full-scale exercises at some of the facilities. The Postal Service has created a one-call alert system for employees at the facilities.

Workshop participants also discussed Wisconsin's plans for managing the surge in hospital patients that could occur during a biohazard incident. James Monarski of the Health Resources and Services Administration said that his agency is working on the transportation issues involved in managing surges in patient flows at hospitals.

Tom Anderson of the Wisconsin Department of Health and Family Services said that there were approximately 13,000 hospital beds in the state and that hospitals could probably double that number in an emergency. He said that hospitals are working together at different scales to manage potential patient flows. This cooperation often takes the form of mutual-aid agreements.

One participant suggested that mutual-aid agreements might not very useful in the case of multiple hot spots or widespread outbreak of disease. Another participant noted that the majority of emergency medical service (EMS) staff in the state are volunteers, which could affect their willingness to participate in the management of a biohazard situation.

Break-Out Session Participants

Jason Bittner
Steven Golubic
James Monarski
David Noyce
Anne Reshadi-Nezhad
Kari Sasso
Dan Shamo
Peter Shult
Mark Spellman
Anthony Smith
Todd Szymkowski
Annabelle Boyd (facilitator)

SCENARIO 3: COVERT (UNDETECTED) CONTAMINATION OF LIVESTOCK

October 2005

The Homeland Security Advisory System level is at Orange, indicating a “high risk of terrorist attacks.” Although no specific threats have been identified, intelligence reports indicate that attacks against the nation’s agricultural, energy, and transportation sectors are likely. The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) has issued an advisory urging the agricultural community to be on the lookout for suspicious activity in and around farms and at events that include livestock and agricultural products.

As part of the World Dairy Expo taking place in Madison from October 4th to October 8th, several Madison-area dairies are giving farm tours to Expo attendees. One of the participating dairies is Jones Brothers Farm in Waterloo, a farm with 500 milking cows and 1,200 total head of cattle.



October 10, 2005

Mark Jones of Jones Brothers Farms noticed that two of his cattle were salivating excessively and appear to be running a fever, while several other head were acting more lethargic than normal and had refused their morning feed. Jones isolated the ailing cattle from the rest of the herd and called the local veterinarian to check the cattle for foot and mouth disease (FMD).

The local veterinarian arrived and found that the cattle had elevated temperatures and that large portions of the epithelial surface of their tongues were detached. A few also had blisters in their mouths and sores on their feet. He immediately called the USDA Veterinary Services office and alerted them he suspected FMD. A veterinarian trained in diagnosing foreign animal diseases was dispatched to the farm to draw samples and ship them to USDA’s Foreign Animal Disease Laboratory at Plum Island, N.Y., the federal laboratory where foot-and-mouth disease diagnoses are made. The farm is quarantined.

October 11, 2005

The Plum Island test results show that the cattle were infected with foot and mouth disease. They show that the cattle were infected within the previous 72 hours. A local veterinarian receives a call about cattle salivating excessively from a dairy farm in nearby Lake Mills that also hosted tours for the World Dairy Expo.

The Governor declares a state of emergency, and the emergency operations center in Madison is activated under the joint command of the state veterinarian and the federal veterinarian-in-charge for Wisconsin.

Discussion Summary

The break-out session participants identified the following actions as likely responses to the scenario described above. Not all of these actions would require support from transportation agencies:

- Quarantine of affected farms,
- Crime scene investigation (FBI);
- Investigation of movement of contaminated livestock;
- Activation of the State Emergency Operations Center (EOC), Federal EOC, and Federal Joint Field Office;
- Issuance of national animal stop movement order (USDA);
- Interim care of animals stopped in transit;
- Disposal of animal carcasses; and
- Decontamination of affected facilities and vehicles.

Transportation's Role

Participants noted the early involvement of transportation agencies (and law enforcement) in this scenario in enforcing the quarantine of affected farms and the re-routing of traffic around the quarantine areas. Participants thought that transportation agencies currently have sufficient resources and capabilities to carry out this particular action.

Most of the discussion related to the enforcement of a stop animal movement order. Participants suggested that the state DOT would coordinate the enforcement of this order with FHWA, the Federal Motor Carrier Safety Administration (FMCSA), and the DOTs of neighboring states. The state DOT might also coordinate with private carriers. Participants suggested that the State Patrol and possibly the National Guard would be needed to enforce the order at state borders and possibly at weigh stations. Participants were not sure whether transportation agencies were currently prepared to enforce a stop movement order in a timely manner.

It was recognized that during the period that a stop movement order was in effect, it would be necessary to care for animals stopped in transit. It was suggested that transportation agencies might play a role in directing carriers to holding locations (e.g., county fairgrounds) or in supplying food and water for animals stopped in transit. However, the group was uncertain exactly how the stop movement order would be implemented and maintained and what type of support transportation agencies would be asked to provide.

Participants saw a potential role for transportation agencies in the disposal of animal carcasses. Heavy equipment owned by state and local transportation officials could be used to transport or bury carcasses. This equipment would need to be decontaminated afterwards. Decontamination of weigh stations, truck stops, or other affected transportation infrastructure would be needed as part of the recovery from the biohazard incident.

Potential Role of ITS Technology to Facilitate Response

Discussion of the potential use of ITS technologies focused on enforcement of the stop movement order. It was suggested that highway variable message signs could be used to alert carriers of livestock about the stop movement order, but it was noted that these signs are not widely deployed throughout Wisconsin. Participants also mentioned other communications tools, such as Highway Advisory Radio and the federal Highway Watch network, which is capable of sending out alerts to its participants.

One participant suggested that Commercial Vehicle Information Systems and Networks (CVISN) technology might be helpful. This technology is used to provide information to officials involved in roadside enforcement of motor carrier regulations. It was suggested that the information provided by CVISN might be useful in tracking the movement of particular carriers or in enforcing a stop animal movement order.

Discussion of Scenario with All Workshop Participants

During discussion of the scenario with the full group of workshop participants, several additional points were raised. It was noted that last year, Wisconsin enacted the nation's first mandatory livestock premises registration law, which the U.S. Department of Agriculture (USDA) has adopted as a model for national use. USDA is working toward a national animal identification system that will allow officials to quickly determine the movements of individual animals from birth.

A workshop participant noted that some diseases affect both domestic and wild animals; in those cases, coordination with the wildlife officials would be necessary.¹ A disease outbreak of this sort would affect transportation agencies, because animals killed on roadways would have to be disposed of properly and the maintenance vehicles used in such operations would have to be decontaminated.

Another participant asked who would be responsible for certifying public and private vehicles as adequately decontaminated. Unaffected states would be keenly interested in ensuring that incoming vehicles and animals are free of disease.

Break-Out Session Participants

Ed Gleason
Pat O'Connor
David Platz
Robin Schmidt
Joe Such
Jeff Western
Brian Carney (facilitator)
Antonio Santalucia (notes)

¹ A representative of the Wisconsin Department of Natural Resources was invited but could not attend the workshop.

DISCUSSION OF DRAFT TRANSPORTATION BIOHAZARDS OPERATIONAL CONCEPT

One of the outputs of this overall project will be an operational concept, which will support the efforts of state DOTs in defining their organizational structure, roles, responsibilities, processes, and policies for managing a biohazard event. The operational concept will clarify the transportation functions to be performed during a biohazard situation and provide a blueprint for building consensus among transportation, emergency management, public health, agriculture and veterinary medicine, and public safety stakeholders on critical issues involved in biohazard events.

Workshop participants were provided a draft version of the operational concept shortly before the workshop and were briefed on the contents of the document during the afternoon session of the workshop. Participants were asked to focus their comments on *Section 6 – Transportation Role in Biohazard Event* of the draft operational concept. Based upon review and discussion, the following suggestions were made:

Awareness

- Add a specific reference to transportation agency coordination with Local Emergency Planning Committee.
- Add “preparedness organizations” in addition to participation with the Joint Terrorism Task Force.
- Specifically call out activities performed to build relationships with local, regional, and State Emergency Management Agencies (EMAs), Emergency Operations Center (EOC) managers and personnel, and Local Emergency Planning Committees (LEPCs) and State Emergency Response Commissions (SERCs).
- Specifically call out activities performed to build relationships with the U.S. military and intelligence communities.

Prevention

- Emphasize the “all-hazards” nature of prevention, by referencing mitigation activities performed to address natural disasters (i.e., land use and management, engineering assessments, development and adherence to local and state codes and federal regulations, application of special materials and designs to prevent flooding, control wildfires, and reduce the impacts of earthquakes, hurricanes and tsunamis, etc.).
- Add threat and vulnerability assessment.
- Add security reviews performed on plans, designs, blue prints and specifications.
- Add specific training, equipment procurement or other activities designed to focus on prevention by employees.
- Add specific mention of CCTV video recording and archival considerations.

Preparedness

- Specifically address IT/GIS continuity of operations capabilities.
- Add specific mention of the need to coordinate with contractors to identify resources that they may have available to support emergency response, and to ensure their willingness to use them during an emergency.
- Add “foreign language speakers” to special populations and address the need for plans and procedures to communicate with citizens who may not understand English.
- Add reference to interagency working groups or other organizations established to address decontamination issues in local, regional and state communities.
- Add reference to the need to establish a procedure for credentialing transportation personnel to ensure their access to locations and resources.
- Add specific mention of transportation CCTV and aerial surveillance policies to ensure that situations observed by transportation personnel are relayed effectively to appropriate responders.

Response

- Move the discussion on public information, transportation support for no-notice evacuation and transportation use of technology to the Preparedness section.
- Add GIS technology and CAD integration technologies to the list in the technology discussion.
- Add specific mention of transportation activities to prioritize needs and available resources.
- Add specific mention of how the transportation agency will determine that emergency response is no longer necessary and the event has ended.
- Add “hot wash”/after-action briefing as the last activity to be performed during response.

Recovery

- Add specific mention of transportation process for evaluating alternatives and making choices regarding activities to take for restoration and recovery (i.e., the community needs a clear vision regarding recovery and the transportation agency needs to understand its recovery objectives)
- Ensure that a formal after action report and improvement plan are developed and incorporate results of these documents back into the transportation agency’s activities for awareness, prevention, preparedness, response and recovery.

APPENDIX: WORKSHOP PARTICIPANTS

Project Sponsors/Co-Sponsors:

Vince Pearce
Team Leader, Public Safety and Security
Office of Transportation Operations
Federal Highway Administration

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