ROAD CLOSED

BRIDGE OUT

EVACUATION ROUTE

EMERGENCY INFO 90.7 FM

Road Rangers

Good Practices in Transportation Evacuation Preparedness and Response

Results of the FHWA Workshop Series

U.S. Department of Transportation

Federal Highway Administration

August 2009

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16. Abstract This document provides an overview of the good practices identified during a series of multi-state workshops on Transportation Evacuation Preparedness and Response in four regions across the United States. Good practices are not presented in priority order, but rather were grouped in the three workshop phases as follows: ■ Preparation and Activation ■ Response ■ Re-entry and Return to Readiness. ■ The four workshops were based on the Federal Highway Administration's three volume primer series, *Routes to Effective Evacuation Planning Primer Series* – Using Highways for Notice Evacuations – Using Highways for No-Notice Evacuations – Evacuating Populations With Special Needs.			
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EXECUTIVE SUMMARY

Between May 2007 and September 2008, the Federal Highway Administration (FHWA) conducted multi-state workshops on Transportation Evacuation Preparedness and Response in four regions across the United States. The objectives of these workshops were to:

- Develop the responsible agencies' awareness of the critical evacuation processes, issues, and activities that arise before, during, and following an emergency evacuation and discuss possible approaches to addressing these issues.

- Foster and support institutional relationships among transportation, emergency managers, law enforcement agencies, and emergency responders for planning and executing a mass evacuation.

- Encourage an environment supporting sustained information sharing and routine interaction among the agencies involved in managing transportation during evacuations.

- Develop a set of next steps to improve transportation-specific evacuation operations before, during, and after an emergency event.

The locations and dates for the workshops were as follows:

- Tallahassee, Florida—May 30–31, 2007
- Long Beach, California—January 29–30, 2008
- Richmond, Virginia—June 2–3, 2008
- Chicago, Illinois—September 16–17, 2008.

The purpose of this report is to consolidate the good practices identified during the four regional workshops. Practices are not presented in priority order, but rather have been grouped into the three workshop phases as follows:

- Preparation and Activation
- Response
- Re-entry and Return to Readiness.

For additional information on these issues, please contact the FHWA project manager at the e-mail address provided in this report.

ACRONYMS

ATC	Assembly and Transfer Center
BOMA	Building Owners and Managers Association
Caltrans	California Department of Transportation
CBD	Central Business District
CHP	California Highway Patrol
CTA	Chicago Transit Authority
DOT	Department of Transportation
DSS	Department of Social Services
EDIS	Emergency Digital Information System
ER	Emergency Relief
FDEM	Florida Department of Emergency Management
FDOT	Florida Department of Transportation
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GCM	Gary-Chicago-Milwaukee Corridor
HSEMD	Iowa Homeland Security and Emergency Management Division
IDOT	Illinois Department of Transportation
IEMA	Illinois Emergency Management Agency
IMT	Incident Management Team
INDOT	Indiana Department of Transportation
ITTF	Illinois Terrorism Task Force
ITS	Intelligent Transportation Systems
JIC	Joint Information Center
LEIN	Law Enforcement Information Network
MDOT	Michigan Department of Transportation
MSDOT	Mississippi Department of Transportation
MSP	Michigan State Police
MRE	Meal Ready to Eat
NIMS	National Incident Management System
OEMC	Office of Emergency Management and Communications
OES	Office of Emergency Services
RIITS	Regional Integration of Intelligent Transportation Systems
SEOC	State Emergency Operations Center
STARS	Statewide Agency Radio System
ST-ISAC	Surface Transportation Information Sharing and Analysis Center

TAN	Transit Alert Network
TMA	Traffic Management Authority
TMC	Transportation (or Traffic) Management Center
TxEMA	Texas Emergency Management Agency
VDEM	Virginia Department of Emergency Management
VDH	Virginia Department of Health
VDOT	Virginia Department of Transportation
VDRPT	Virginia Department of Rail and Public Transportation
VECTOR	Virginia Evacuation Coordination Team for Operational Response
VSP	Virginia State Police
WisDOT	Wisconsin Department of Transportation

NOTE: This list of acronyms is not intended to be all inclusive of emergency operations terminology. It reflects acronyms used during the four workshops and are included in this report.

PARTICIPATING AGENCIES/ORGANIZATIONS

Tallahassee, Florida
Alabama Department of Public Safety

Alabama Department of Transportation

Alabama Emergency Management Agency

Coach America Bus Evacuation Services

Department of Homeland Security, Transportation Security Administration

Federal Emergency Management Agency

Federal Highway Administration

Florida Department of Law Enforcement

Florida Department of Transportation

Florida Division of Emergency Management

Florida Highway Patrol

Governor's Office of Homeland Security and Emergency Preparedness (LA)

Houston Metropolitan Department of Public Safety

Louisiana Department of Transportation

Metro (Houston, TX)

Mississippi Department of Transportation

Mississippi Emergency Management Agency

Texas Department of Transportation

United States Department of Transportation

Long Beach, California
Arizona Department of Transportation

Caltrans

Department of Homeland Security, Transportation Security Administration

Department of Public Safety/Highway Patrol (Utah)

Federal Bureau of Investigation, Field Intelligence Group

Federal Emergency Management Agency

Federal Highway Administration

Federal Motor Carrier Safety Administration

Federal Transit Administration, Los Angeles Metro Office

Long Beach Transit

Los Angeles County Metropolitan Transportation Authority

Oregon Department of Transportation

State of California, Governor's Office of Emergency Services

RICHMOND, VIRGINIA

Atlanta Police Department

Atlanta Regional Commission

D.C. Department of Public Works

Delaware Department of Transportation

Department of State Police (Virginia)

District Department of Transportation

Federal Highway Administration

Loudon County Sheriff's Office

Maryland State Police

National Oceanic and Atmospheric Administration/National Weather Service

Nuclear Regulatory Commission

Pennsylvania Department of Transportation

Pennsylvania Emergency Management Agency

Virginia Department of Emergency Management

Virginia Department of Transportation

Virginia National Guard

Virginia State Police

CHICAGO, ILLINOIS

American Red Cross

Argonne National Laboratory

Chicago Transit Authority

Federal Highway Administration

Illinois Department of Transportation

Illinois Emergency Management Agency

Illinois Law Enforcement Alarm System

Illinois Tollway

Iowa Department of Transportation

Iowa Homeland Security and Emergency Department

Metra

Michigan Department of Transportation Safety and Security Administration

Michigan State Police

Mutual Aid Box Alarm System

Pace Suburban Bus

Wisconsin Department of Transportation

Wisconsin State Patrol

INTRODUCTION

As described in the Executive Summary, the Best Practices are organized into the three phases used in the tabletop exercise section of the workshops. These phases were Preparation and Activation; Response; and Re-entry and Return to Readiness. The tabletop exercise section of the workshop included a scenario requiring an evacuation. The scenario changed and progressed through the three phases just as many emergency situations do when they occur. Workshop participants discussed the scenario at each phase and discussed what their concerns were at that point in time and how they would respond in such a situation. During these discussions, participants identified a number of good practices routinely followed and those have been summarized in the sections below.

PHASE 1—PREPARATION AND ACTIVATION

In *Preparation and Activation* or phase 1 of the tabletop exercise, participants were provided background information on the current situation and then provided some warning that an emergency situation was going to occur such as an approaching hurricane, wildfire outbreaks, or severe weather causing power outages. Because the emergency situation had not yet completely unfolded, participant discussion focused on planning, preparedness, and pre-activation of emergency procedures.

COORDINATION FOR EMERGENCY PREPAREDNESS

- **Safeguard Iowa Partnership**—This Partnership is a voluntary coalition of business and government leaders to prevent, prepare for, respond to, and recover from disasters through public-private collaboration. See http://www.safeguardiowa.org/ for additional information.

- **Building and Managers Association (BOMA)**—A voluntary organization involved in emergency and evacuation planning in Chicago. Many BOMA members have identified alternate business locations (hot sites) outside the Central Business District (CBD) in preparation for an emergency.

- **Required Evacuation Plans for Structures**—The City of Chicago through its Office of Emergency Management and Communications (OEMC), requires evacuation plans for buildings with more than four stories. Plans must be submitted to the OEMC. This advance information allows both responders and potential evacuees to be more prepared in the event of an evacuation in the CBD.

- **Annual I-64 Lane Reversal Evacuation Exercise**—The Commonwealth of Virginia holds a lane reversal exercise for I-64 prior to the start of the annual hurricane season with participants from the Virginia Department of Transportation (VDOT), Virginia State Police (VSP), National Guard, Virginia Department of Rail and Public Transportation (VDRPT), Virginia Department of Emergency Management (VDEM), and Virginia Department of Health (VDH). The purpose is to test their readiness to implement lane reversal if required and to identify and implement any "lessons learned" as a result of the exercise.

- **Annual Meeting between Adjoining States Regarding Evacuation**—Virginia and North Carolina meet prior to start of hurricane season and include both Departments of Transportation (DOTs) and law enforcement agencies from both states at the meeting. The available evacuation routes for both states require coordination as each state's evacuating traffic could affect the other state's evacuation operations.

- **State Emergency Operations Center (SEOC)**—In Iowa, the SEOC is the entity responsible for ensuring state agencies in Iowa meet all requirements of the National Incident Management System (NIMS). The SEOC is operated by the Iowa Homeland Security and Emergency Management Division (HSEMD).

■ **Point-to-Point Shelter Designations**—In Texas, cities pair up and agree to take the other's evacuees. The system is overseen by the Texas Emergency Management Agency (TxEMA). The purpose of the shelter designations is to maintain a more even distribution of evacuees so that some shelters do not receive more evacuees than they can accommodate. It is also useful to evacuees to know ahead of time, exactly where they should go to find shelter.

Fuel Equipment and Supplies

■ **Fuel Availability for Evacuees**—The Florida Department of Transportation (FDOT) conducts pre-storm polling of gas stations along major evacuation routes and pushes fuel to critical emergency response functions and gas stations who need the supply for evacuees. Post-storm, the Florida Division of Emergency Management (FDEM) uses fuel tenders to refuel vehicles directly. Florida now has access to 27 tenders available in the southeastern United States. A Florida law passed in 2006 requires gas stations along evacuation routes to have an emergency generator to allow for the pumping of fuel even if the power is out in an area.

■ **Fuel Availability for Transit Agencies**—Houston Metro maintains a "stockpile" of fuel. For transit agencies, this is necessary to evacuate vehicles from flood-prone areas. For all agencies, the stockpile can be used to ensure that rescue and recovery vehicles can operate even when commercial service stations cannot.

Public Information and Education

■ **Text Alerts to the Public**—Starting in the fall of 2008, the City of Chicago established an emergency text alert messaging system, "Notify Chicago." Alerts can be sent to cell phones, Blackberries, and other hand held devices to registered Chicagoans. For further information see http://webapps.cityofchicago.org/ChicagoAlertWeb/. Another example is California's Office of Emergency Services (OES) Emergency Digital Information System (EDIS) system which also provides emergency alerts to subscribers.

■ **Multilingual Communications—**The Los Angeles Police Department uses a broadcasting system that can broadcast information in 32 languages. Due to the numerous languages spoken in the Los Angeles region, this ability to broadcast in many languages is critical to ensure that people hear and can understand the emergency information being broadcast.

■ **Public Education on Evacuations**—All of the State DOTs who participated in the Tallahassee workshop have contraflow plans in place due to their locations in hurricane prone areas. They agreed it was important to educate/prepare people to "expect the worst" when it comes to traffic conditions when contraflow is underway. The DOTs emphasized that it is important that evacuees understand that it will still take many hours to evacuate even with contraflow operations in place, so they should plan to evacuate when the evacuation order is given.

■ **Accommodating Families of First Responders**—In Mississippi, families of response workers are allowed access to government facilities and shelters to ensure they are accommodated so the first responders in their family are not worried about their well-being in an evacuation situation. In another example, VDOT encourages all employees, especially those with first responder duties in an evacuation, to have a plan in place to accommodate their families during an evacuation.

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) INCLUDING TRANSPORTATION MANAGEMENT CENTERS (TMCs)

■ **Text Alerts**—Text alert subscriptions are provided by the Illinois Department of Transportation (IDOT) through its TMC (iltrafficalert.com). These alerts provide the subscribers with the most real-time traffic information available in the area and can be used to provide emergency information.

■ **Coordinated TMC Information**—The TMCs that are members of the Gary-Chicago-Milwaukee (GCM) Corridor provide coordinated traffic information to the public on both a routine and emergency basis. Such information provides a more regional outlook of traffic conditions allowing motorists to make decisions about their choice of routes. GCM members include the Indiana Department of Transportation (INDOT), IDOT, and Wisconsin Department of Transportation (WisDOT).

■ **Mobile Video and Data Collection Units**—VDOT leases mobile video and data collection units (wireless communication, real time video, traffic counter, traffic speeds, and weather data) that can be deployed around the state in an emergency or for special events to supplement permanent ITS equipment.

■ **Regional Integration of Intelligent Transportation Systems (RIITS)**—RIITS is a regional transportation information sharing network operated by the California Department of Transportation (Caltrans) and is used to share both daily and emergency information. The system is located at the Los Angeles Regional TMC and information is provided to over a dozen participating agencies and to commercial information providers.

■ **Pre-positioning ITS Resources**—VDOT pre-positions its I-64 lane reversal and service patrol resources in the Tidewater area prior to an evacuation. This action provides supplemental service levels in advance of the actual evacuation.

PHASE 2—RESPONSE

In phase 2 of the tabletop exercise, *Response*, participants were provided information on the emergency event such as a hurricane hitting a specific geographic area, the location of significant wildfire activity in multiple locations, or severe weather causing power outages and significant damage. In each scenario, the emergency event caused the need for an emergency evacuation. In this phase participant discussion focused on activation of emergency procedures including evacuation and responding to the overall emergency.

COORDINATION FOR EMERGENCY RESPONSE

■ **Multi-disciplined Evacuation Coordination Team**—This team of Florida agencies convenes at the SEOC in Tallahassee to coordinate/listen to local officials. They convene 48 hours before landfall of a storm such as a hurricane and on an as-needed basis for other emergencies requiring an evacuation. In another example in Virginia, they formed Virginia Evacuation Coordination Team for Operational Response (VECTOR), a multi-agency evacuation and sheltering coordination team including VDEM, VDOT, VSP, Department of Social Services (DSS), National Guard, and the Tourism Commission. Their purpose is to coordinate their evacuation activities and resources.

COMMUNICATIONS SYSTEMS USE AND COORDINATION

■ **Use of 511 Systems to Provide Emergency Information**—In July 2000, the Federal Communications Commission (FCC) designated 511 as the single travel information telephone number to be made available to states and local jurisdictions across the country. The states of Florida, Virginia, and Oregon

have 511 systems in their states and all use them to provide emergency information, including evacuation information, when necessary.

- **Law Enforcement Information Network (LEIN)**—In Michigan, LEIN can broadcast information statewide on overweight, oversize permitted truck movements. LEIN is operated by the Michigan State Police (MSP) with permit information provided by the Michigan Department of Transportation (MDOT). This information can be useful particularly during emergency response when oversize vehicles may be required to transport heavy equipment and relief supplies to an affected location.

- **Transit Alert Network (TAN)**—The TAN is a network used to share information among transit agencies in the Chicago metropolitan area. The network, which is tested monthly, can be used by any member of the network to send alerts. The TAN is tied to the Surface Transportation-Information Sharing and Analysis Center (ST-ISAC) in Herndon, Virginia. Current TAN participants are the Chicago Transit Authority (CTA), Metra, Pace, Northern Indiana Transit District, AMTRAK, and the Class I railroads in the region.

- **Statewide Agency Radio System (STARS**)—The Virginia Office of Commonwealth Preparedness provides the STARS system to state agencies allowing for interoperability of radio communications among state agencies. VDOT also maintains its internal radio system as a back-up system.

INFORMATION SHARING

- **Joint Information Center (JIC)**—Use of a JIC to share information among agencies and determine what information should be provided to the public in the event of an emergency. In California, the JIC includes OES, California Highway Patrol (CHP), and Caltrans.

- **Media Monitoring**—Caltrans monitors various television and radio reports to see if they are providing accurate information and if not, they quickly correct it. This action is particularly important in an emergency situation when conditions may change rapidly.

EMERGENCY OPERATIONS CENTER PRACTICES

- **State Logistics Center**—Operated by FDEM, it is a building centrally located in Orlando. The center stockpiles food, water, Meals Ready to Eat (MREs), traffic signs, etc. for further distribution throughout the state for emergency response.

- **Incident Site Emergency Operations Center (EOC)**—FDEM often establishes a forward SEOC to establish command and control on the incident site. This field location coordinates with the SEOC in Tallahassee as required.

EMERGENCY TRAFFIC MANAGEMENT AND EVACUATION

- **Traffic Management Authority (TMA)**—In Chicago, it is the agency that directs traffic during rush hours and emergencies in the CBD. The TMA is operated by the OEMC. The TMA staff are located at critical intersections to move traffic and to maintain access for emergency vehicles. The TMA was established in 2004 in an effort to alleviate the Chicago Police Department's traffic control functions to allow the police to concentrate on crime reduction.

- **Assembly and Transfer Centers (ATCs)**—As part of the City of Chicago's evacuation plan, CTA and Pace (the suburban bus system) are the agencies responsible to provide outbound service to evacuate people via public transit. CTA moves the evacuees from the CBD out to suburban locations known as ATCs where Pace will then accept the evacuees and transport them to another designated location which might be a shelter location.

PERSONNEL AND RESOURCE MANAGEMENT

- **Incident Management Teams (IMTs)**—Iowa has developed a team composed of retired emergency management personnel who can backfill permanent staff in an emergency to better manage personnel resources. Teams are operated under HSEMD.

- **Provide Cash to Responders**—A practice of the Houston Metro is to provide cash to rescue teams, security personnel, utilities personnel, and other response crews in case they must make purchases during recovery operations. These personnel may not have the means to make necessary purchases and in some cases, may not have access to cash due to power outages that affect the banking network. Alternatively, provide credit cards, or some other means to pay for equipment, supplies, food, water, and other potential equipment necessary to their response and recovery mission.

- **Use of Tiger Teams**—VDOT and VSP have identified personnel who can be deployed anywhere in the state to respond to an emergency as necessary. These are multi-disciplined teams who can provide necessary personnel and equipment resources in a variety of emergencies.

- **Common Credentialing**—Credentials provided by the Illinois Terrorism Task Force (ITTF) for all first responders including temporary cards. Common credentialing is useful to provide a common personnel identification card to staff from a variety of agencies allowing access to secure incident scenes. In another example, Florida has provided a "State Emergency Response Team (SERT)" identification card to responder personnel regardless of which agency, contractor, or private sector company they represent.

PHASE 3—RE-ENTRY AND RETURN TO READINESS

In phase 3 of the tabletop exercise, *Re-entry and Return to Readiness*, participants were provided information on the fatalities and casualties caused by the emergency event as well as the damage to infrastructure and other structures. Participant discussion focused on responding to medical and other human needs, recovery activities such as search and rescue and damage assessment, necessary repairs to allow evacuee re-entry and readiness procedures once the initial recovery phase was completed.

- **Performance Expectations**—FDOT sets aggressive performance expectations for its districts for response and recovery activities. The purpose is to provide the quickest and most complete response, prioritize resources, and to identify areas for future improvement in response and recovery activities.

EMERGENCY DOCUMENTATION

- **Debris Removal**—A debris management plan is required of all local agencies in Illinois before any debris is moved after an event. If state assistance is required, IDOT and the Illinois Emergency Management Agency (IEMA) have an incinerator that can be placed on public property. Inmate labor is used to pick up debris. The process is overseen by IEMA and IDOT. In another example, FDOT has a scope of services for debris removal pre-approved by FHWA and measured by cubic yard so the contract can be used for reimbursement under both Emergency Relief (ER) and Federal Emergency Management Agency (FEMA) as needed.

- **Damage Assessment**—The Mississippi Department of Transportation (MS DOT) dispatches trained damage assessment inspectors quickly after an event to identify road damage and prioritize road repairs.

- **Damage Documentation**—VDOT instructs all of its staff and contractors involved in damage assessment to take photos to support/document requests to the FHWA and FEMA for reimbursement of expenditures for emergency response and repairs after an incident.

Public Information

- **Multiple Means of Communications**—FDOT uses multiple communication channels to disseminate human services, travel advisory, and re-entry information after an incident. This is important because once an evacuee has left an area, it is difficult to know what methods of communication will reach them in their temporary location.

CONTACT INFORMATION

For additional information on this report, contact Kimberly Vasconez, Emergency Transportation Operations (ETO) Team Leader FHWA, U.S. Department of Transportation, via e-mail at Kimberly.Vasconez@dot.gov.

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