



# Emergency Transportation Operations Planning Documents

U.S. Department of Transportation (USDOT)/Federal Highway Administration (FHWA) with the Intelligent Transportation Systems (ITS)/Joint Program Office (JPO)

The following documents may be accessed via: FHWA Operations website ( <http://www.ops.fhwa.dot.gov> ), the ETO website ( [http://ops.fhwa.dot.gov/eto\\_tim\\_pse/index.htm](http://ops.fhwa.dot.gov/eto_tim_pse/index.htm) ), and the DHS Lessons Learned Information Systems ETO Channel ( <http://www.llis.gov> ). Some documents are now in print. Those wishing to reserve documents may send an email to [ETO@dot.gov](mailto:ETO@dot.gov). We will send copies once the documents are printed.

ETO launched a new TIM Performance Management Knowledge Management System. Readers will find reference to the KMS below and may go to the following link to sign up for the LISTSERV and find various referenced documents: [http://ops.fhwa.dot.gov/eto\\_tim\\_pse/preparedness/tim/knowledgebase/index.htm](http://ops.fhwa.dot.gov/eto_tim_pse/preparedness/tim/knowledgebase/index.htm)



## Emergency Transportation Operations Publications



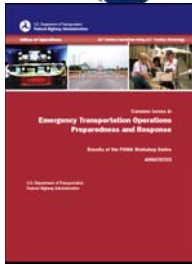
**The Best of Public Safety and Emergency Transportation Operations CD** (FHWA-JPO-08-037) This CD includes a myriad of the best research and documents that came from the Joint Program Office, FHWA and NHTSA organizations within USDOT on the topics of Public Safety and Emergency Transportation Operations. It included documents in the following areas: Public Access to Emergency Services, Enhanced Information Sharing, Evacuation Management and Operations, Transportation during BioHazard Situations, Preparedness and Response, and Planned Special Events. The documents range from publication in 2003 to 2008. *(Will be updated in late 2010 with new TIM, PSE and Disaster Ops Publications)*

**Best Practices in Emergency Transportation Operations Preparedness and Response: Results of the FHWA Workshop Series** (FHWA-HOP-07-076): Also based on the 2002 to 2005 FHWA workshops, FHWA extracted best practices and lessons learned from the participants who comprised transportation professionals, emergency managers and first responders.





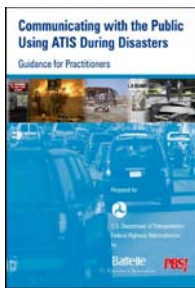
## FHWA Emergency Transportation Operations Planning Documents



**Common Issues in Emergency Transportation Operations Preparedness and Response: Results of the FHWA Workshop Series** (FHWA-HOP-07-090): From 2002-2005, FHWA held 30 workshops around the country gathering the transportation community, emergency managers, 1<sup>st</sup> responders and public information officers to recognize each other's vital role in emergency preparedness and response. This report consolidates common issues in the various areas, including Coordination & Communication; Emergency Operations; Equipment; ITS; Mutual Aid; Threat Awareness & Information Sharing; and Policy.

### **Information Sharing Guide Book for Traffic Management Centers, Emergency Operations Centers, & Fusion Centers**

(FHWA-OP-09 expected summer 2010): This project includes a study and guide book on how the Traffic Management Centers may provide important situational awareness information to Emergency Operations Centers and Fusion Centers during incidents. It addresses information being collected from Intelligent Transportation Systems, such as traffic cameras; how transportation tools like 511 or Advanced Traveler Information may be used by emergency managers to get critical information out to travelers, and how the personnel in all three locations may collect and share critical information to support the mission of the others.

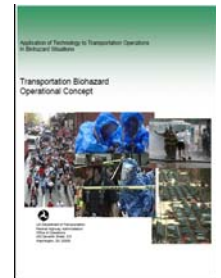


### **Communicating with the Public Using ATIS During Disasters: Guide for Practitioners**

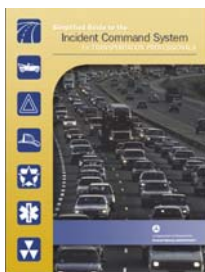
(FHWA-JPO-07-068): This document examines the current use of traveler information in managing traffic incidents and planned special events through 5 case studies of actual disasters in GA, CA, NV, UT, and WA. It explores how Advanced Traveler Information Systems (ATIS) could aid in communicating with the public during disasters. Finally, it provides a toolkit for organizing and conducting a strategy workshop on integrating ATIS and other communication tools into an enhanced public disaster information strategy.

### **Final Report for the Application of Technology to Transportation**

**Operations in Biohazard Situations** (not in print): This document provides findings of an FHWA project, undertaken to develop a more comprehensive and actionable understanding of the role of transportation agencies during a biohazard situation. The final report and tools produced are intended to help State and local transportation agencies perform their roles during all phases of a biohazard incident. Those roles can differ significantly from the ones they typically perform during other types of emergencies.



## Incident Management & Transportation



### **Simplified Guide to the Incident Command System (ICS) for Transportation Professionals**

(FHWA-HOP-06-04): This Guide introduces ICS to those who must provide specific expertise, aid or material during highway incidents but who may be unfamiliar with ICS organization and operations. These include transportation professionals, companies involved in towing and recovery, and elected officials and government agency managers at all levels. This document describes the ICS in the context of its application to highway incidents and also discusses the broader relationship to the National Incident Management System (NIMS).

## Traffic Incident Management Publications

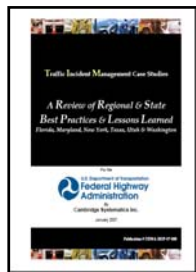




## FHWA Emergency Transportation Operations Planning Documents

**Traffic Incident Management Handbook** (expected spring 2010): This project will involve updating the latest TIM Handbook (released in 2000) based on State of the Practice changes, new FHWA TIM emphasis areas (e.g., program and incident performance measurements; Full-Function Service Patrols; Safe, Quick Clearance Legislation, Policies, and Operations; and Computer-Aided Dispatch and Traffic Management Center Integration), and using National Incident Management System Language.

**TIM Best Practices Manual** (expected spring 2010) This document will provide best practice case studies for the TIM Discipline



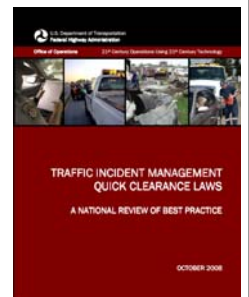
### **TIM Case Studies: A Review of Regional & State Best Practices & Lessons Learned from FL, MD, NY, TX, UT & WA** (FHWA-OP-07-080):

The document introduces State, Regional or local case studies on effective TIM programs from across the country. The case studies come from Florida, Maryland, New York, Texas, Utah and Washington. By providing a 'snapshot' view of the history, challenges, and solutions of other jurisdictions, the reader can

explore different methods to implement a successful program in their area.

### **Traffic Incident Management Quick Clearance Laws: A National Review of Best Practices**

(FHWA-OP-09-005): This report (1) prepares States contemplating quick clearance legislation with reasons why such laws are needed (2) provides a detailed review of the purpose, intent, model language, observed content trends and anomalies and implementation challenges and resolutions for Move Over, Driver Removal and Authority Removal Laws, including specific examples; and (3) strategies for implementing these laws.



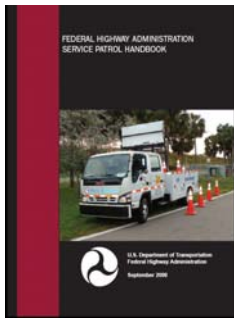
**Safe, Quick Clearance of Traffic Incidents Primer Series** This project includes 5 primers that will describe various aspects of Safe, Quick Clearance of traffic incidents, as well as 1-page Summaries .

- **Information Sharing in TIM** (FHWA-HOP-08-059)
- **Information Sharing in TIM Executive Summary** (FHWA-HOP-08-059ex)
- **TIM Resource Management** (FHWA-HOP-08-060)
- **TIM Resource Management Executive Summary** (FHWA-HOP-08-060ex)
- **Traffic Control Concepts for Incident Clearance** (FHWA-HOP-08-057)
- **Traffic Control Concepts for Incident Clearance** (FHWA-HOP-08-057ex)
- **TIM in Construction & Maintenance Work Zones** (FHWA-HOP-08-056)
- **TIM in Construction & Maintenance Work Zones Executive Summary** (FHWA-HOP-08-056ex)
- **TIM in Hazardous Materials Spills in Incident Clearance** (FHWA-HOP-08-058)
- **TIM in Hazardous Materials Spills in Incident Clearance** (FHWA-HOP-08-058ex)

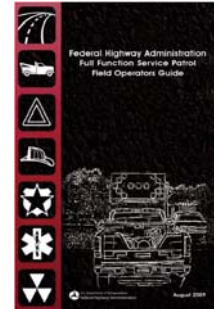




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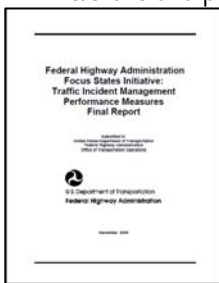


**Traffic Incident Management: Full-Function Service Patrol (FFSP) Handbook** (FHWA-HOP-08-031): This Handbook provides a detailed guide on roles and responsibilities of the FFSPs and their partners at an incident, decision making, a concept of operations, suggested equipment lists, reporting forms, formats and processes (including to the TMCs), public communications (including how the public accesses FFSPs), and checklists and other tools to aid transportation operations personnel serving in the FFSP. This handbook explains the reasons that metropolitan areas should upgrade courtesy patrols or partial-function service patrols to FFSPs that operate 24/7, the cost efficiencies of using an FFSP versus police or fire to cover some response to incidents and other factors important to establishing FFSPs.



## Full-Function Service Patrol Field Operations Guide (FOG) Checklists and Visor Cards Set

(FHWA-HOP-10-014): This document takes the Full-Function Service Patrol Handbook a step further and provides a tactical guide for Service Patrol personnel functioning in the field. (finalized, to be posted by 3/31/10 and printed in Summer 2010)



## Traffic Incident Performance Metrics: Final Report of the TIM Focus States Initiative

(online only): This document provides recommended operational performance metrics for clearing incidents on-scene. This research is being conducted as part of the FHWA Traffic Incident Management Focus State Initiative. *Posted on FHWA website and Knowledge Management System.*

## TIM Performance Measurements State of the Nation Report, including

**Secondary Crash Study Report (expected 12/10):** This study report will describe how incident performance measurements are being conducted in the top 40 jurisdictions and their States focusing on measuring time of lane closures, time of response operations, and number of secondary crashes associated with and incident. This includes an inventory of how this is being measured, what criteria/definitions are being used, how to best standardize this, etc. It will include the results of research on how to define and collect performance data on secondary crashes associated with primary traffic incidents.

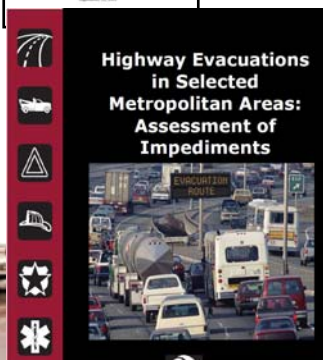
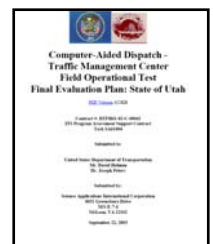


## ITS to Improve Response by Towing/Recovery and HazMat (CAPWIN):

This report describes a case study of how cell phone cameras provided to 1<sup>st</sup> responders in the Washington, DC, region can be used to send photographs or video to dispatch centers, then relayed to contractors. The report identifies the benefits of using this type of mobile technology. The Capital Area Wireless Integrated Network (CapWIN) and the University of Maryland are involved in this testing.

## Computer Aided Dispatch (CAD) and Traffic Management Center (TMC) Integration Field Operations Tests – States of Washington and Utah :

These documents describe case studies related to a Field Operations Test on the effectiveness of Computer-Aided Dispatch in Traffic Management Centers in Utah and Washington states.



## Evacuation Planning & Operations Publications Highway Evacuations in Selected Metropolitan Areas: Assessment of Impediments

(FHWA-HOP-10-TBD) Almost five years after hurricanes Katrina and Rita battered Louisiana and Texas, public officials remain concerned about the Nation's ability to safely evacuate large numbers of

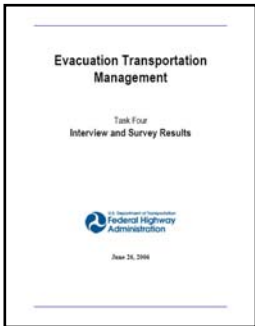




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people. As a part of the Fiscal Year 2010 Department of Transportation appropriations (Public Law 111-117), the U.S. Congress requested the U.S. Department of Transportation (USDOT), in cooperation with the Department of Homeland Security (DHS), to: "assess mass evacuation plans for the country's high-threat, high-density areas and identify and prioritize deficiencies on those routes that could impede evacuations" and "conduct an analysis of how national highway system projects under construction west of the National Capital Region (NCR) could increase the NCR's evacuation capacity and provide a detailed plan to accelerate such projects." The information in this report addresses the first aforementioned assessment and involves a broad view of what local authorities view as the greatest impediments of their National Highway System in supporting a mass-evacuation operation within their region. *To be released in late Spring 2010*

**Evacuation Transportation Management: Operational Concept (FHWA-HOP-08-020):** This document is to outline a concept of operations for transportation management during a no-notice emergency evacuation. This report illustrates how agencies interact with each other, what information is shared, and how transportation systems are effectively managed during disasters. The concept of operations addresses the who, what, when, where, why, and how of the operation of the transportation management system during a major no-notice event or disaster requiring evacuation. A high-level description of activities that occur during each phase of the evacuation process is provided. Thus, this document provides an overview of the various agencies involved, their roles and responsibilities, the type of information exchanged between them, and the methods by which this occurs.



**Assessment of the State of the Practice and State of the Art in Evacuation Transportation Management (FHWA-HOP-08-016):** This paper documents emergency evacuation plans and practices used by transportation management organizations in several large U.S. metropolitan areas. It includes specific management practices using intelligent transportation systems and traffic management tools such as closed caption television cameras, dynamic message signs, 511 systems, highway advisory radio, Web sites, inter-connected traffic signal systems, high occupancy vehicle lanes, and traffic signal priority for transit. This white paper documents inter-views with 14 public and private transportation agencies from five large metro areas. The interviews helped assess the state of the practice in evacuation transportation management in different parts of the country to identify new tools and processes to help agencies plan for and manage evacuations where there is little or no advance warning. Thus, this document provides an analysis of some of the emergency evacuation plans and practices being employed by U.S. transportation management organizations.

**Technical Memorandum for FHWA on Case Studies - Assessment of the State of the Practice and State of the Art in Evacuation Transportation Management (FHWA-HOP-08-014)** During a literature search, researchers found no definitive articles or publications that addressed no-notice evacuations. As such, researchers prepared case studies regarding no-notice evacuations from a transportation point of view. Four candidates identified included the: El Dorado, Arkansas, hazardous-material fire; Graniteville, South Carolina, chlorine gas incident; South Salt Lake City, Utah, hazardous chemical leak from a tanker car; and Southern California wildfires. The case studies were used to identify commonalities and unique distinctions among the cross-section of incidents to identify successes, lessons learned, and best practices to provide guidance to agencies in planning for and managing evacuations. These case studies address the necessary support from public safety and other public organizations with a role in managing evacuations.



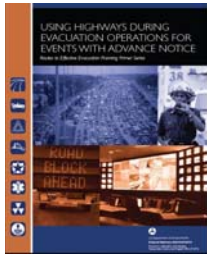
**Literature Search for Federal Highway Administration - Assessment of the State of the Practice and State of the Art in Evacuation Transportation Management (FHWA-HOP-08-015):** Intelligent Transportation Systems (ITS) can make a significant difference in the effectiveness of mass evacuations and improving transportation and emergency management performance. This document summarizes data culled from a literature review on evacuations and identifies gaps in transportation system performance during evacuations. This document: assesses what is known about transportation management during evacuations in no-notice situations; provides initial guidance that





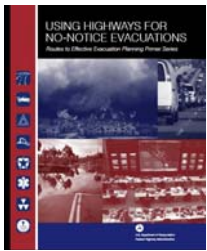
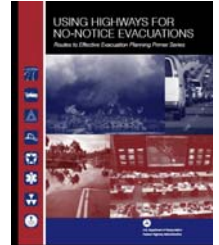
# FHWA Emergency Transportation Operations Planning Documents

agencies can use in planning for evacuations; and provides input to the development of tools for real-time management of evacuations, especially from a transportation perspective.



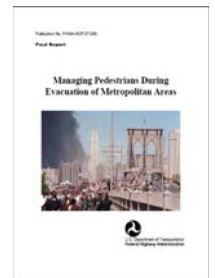
**Routes to Effective Evacuations Primer Series: Using Highways during Evacuation Operations for Events with Advance Notice** (FHWA-HOP-06-109): This first primer in a series that addresses transportation planning for evacuating populations catalogs transportation management and operations advancements that may be applied to improve evacuation planning and operations when advance notice is possible. This primer is a tool to aid local and State planners maximize the highway network and transportation tools and capabilities in evacuation plans and operations for their communities, States or regions.

**Routes to Effective Evacuations Primer Series: Using Highways during Evacuation Operations for Events with Little to No Advance Notice** (FHWA-OP-08-003): This guide covers spontaneous or "no-notice" evacuations. It takes into consideration the security environment that comes into play during a biological, chemical, terrorist or malevolent event, as well as no-notice natural events such as earthquakes or tornadoes. This guide also addresses evacuation considerations versus shelter-in-place orders.



**Routes to Effective Evacuations Primer Series: Evacuating Populations with Special Transportation Needs** (FHWA-HOP-09-022): This primer summarizes information in the other primers that touch on moving populations with special transportation needs. It provides findings, lessons learned and best practices that aid in developing evacuation plans for those with special movement requirements, including the elderly, those with medical conditions, transit-dependent populations, pets and service animals, and people being held by law enforcement officials.

**Managing Pedestrians during Evacuations of Metropolitan Areas** (FHWA-JPO-07-066): This report documents practices available to transportation managers and public safety agencies use to ensure that people evacuating on foot and in vehicles do not hamper each others' mobility. It recommends that evacuation plans account for evacuating large numbers of pedestrians and includes considerations where the deliberate implementation of a pedestrian evacuation strategy is preferred in urban areas to get large numbers beyond the danger zone. *(This will be updated in FY10 with NY State DOT)*



**Inventory of Modeling Capabilities & Applications for Evacuation Operations** This first of two products is available on line. It inventories the modeling tools and types of tools available to aid in evacuation planning. It addresses the differences among macro, meso and micro modeling tools and decision support systems. The second product will be released in August 2008 and will identify the strengths and weaknesses of various modeling software being used by or promoted through vendors to State and local transportation agencies in support of evacuation planning, scenario development or operations.

**Assessment of Modeling Capabilities & Applications for Evacuation Operations:** This product will identify the strengths and weaknesses of various modeling software being used by or promoted through vendors to State and local transportation agencies in support of evacuation planning, scenario development or operations.





# FHWA Emergency Transportation Operations Planning Documents



**Low-Cost Surveillance of Rural Evacuation Routes:** This will be a project report that explores commercial products that could provide sensing and surveillance, independent of wire-line communications and power availability from the electric grid and at substantially lower costs than traditional ITS infrastructures.

## Traffic Planning for Special Events Publications

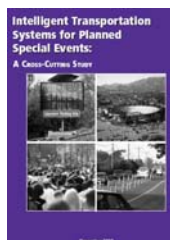
**Managing Travel for Planned Special Events (PSEs) Handbook** (FHWA-OP-04-010): This handbook presents and recommends policies, regulations, planning and operations processes, impact mitigation strategies, equipment and personnel resources, and technology applications used in the advance planning, management, and monitoring of travel for planned special events.



## Managing Travel for Planned Special Events (PSEs) Executive Summary

(FHWA-HOP-07-108): This document is for decision makers and senior officials who must be familiar with Planned Special Events (PSEs) and must provide safe travel to and from these events; the value of regional collaboration; and the merits of local, county and/or state agencies from transportation, transit, public safety, and private sector partners working together in planning and implementing these events. Drawn in part from the handbook, this summary also covers cost recovery and focuses on the *Decision Maker's Responsibility to Community* and the *Stakeholder Challenges and Goals*.

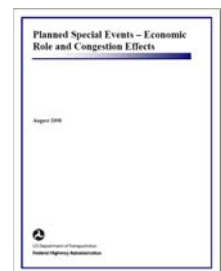
**Planned Special Events: Checklists for Practitioners** (FHWA-HOP-06-113): These six checklists are for event-specific planning for planned special event (PSE) travel management. These checklists follow the order in which the topics are presented in chapters 4, 5, 6, 7, 8, 9, and 10 of the FHWA handbook, *Managing Travel for PSEs*. Each list provides common, sequential steps for plans and activities that practitioners may use for most significant PSEs, regardless of event area.



## Intelligent Transportation Systems for Planned Special Events: A Cross-Cutting Study

(FHWA-HOP-08-030; FHWA-JPO-08-056; EDL# 14436): This cross-cutting study examines how six agencies in five states used and continue to use ITS to reduce congestion generated by planned special events, thereby reducing crashes, increasing travel time reliability, and reducing driver frustration.

**Planned Special Events – Economic Role and Congestion Effects** (FHWA-HOP-08-022): This study estimated the influence that large planned special events (PSEs) have on both the economy and congestion on a national level. The types of PSEs that are of interest to this study are those special events with more than 10,000 participants and spectators. Increased awareness of the frequency and economic magnitude of these large events is essential to better understanding the important role transportation planning should play in managing the transportation aspects of these events.



## Planned Special Event: Cost Management and Cost Recovery Primer

(FHWA-HOP-09-028): This purpose of this primer is to aid jurisdictions and agencies, especially Departments of Transportation, with identifying and managing the costs of planned special events (PSEs) and forming policy for cost recovery. The strategies and examples provided herein are meant to inform the reader on the basics of cost management and cost recovery, thereby facilitating more knowledgeable decision-making and encouraging further discussion among jurisdictions, agencies, and departments.

