

Appendix K. Annotated Bibliography

The Annotated Bibliography begins on the next page. The annotations may, in many cases, have been extracted from the documents themselves, or synopses thereof, but the authors of the 2010 Guide take responsibility for the accuracy of these summaries. Documents are ordered alphabetically by title. All Web sites are hyperlinked and access dates given. Links are not given for materials unavailable online.

Some documents and Web sites are secure and are not openly accessible by the general public. Generally, these are restricted to emergency management (EM) or Homeland Security (HS) officials, including law enforcement officers engaged in EM/HS activities. Often, persons who qualify and have the need to know can apply at a page on the Web site and be vetted by the organization owning the site.

For example, a very good reference Web site is the Lessons Learned Information Sharing (LLIS) at <https://www.llis.dhs.gov/index.do>. (LLIS, URL) On this site, one would click on the link to <Register for *LLIS.gov*> and complete the application.

Documents that are, in part, considered sensitive or even formally classified might be generally available in an abridged, or redacted, version in which the sensitive material has been removed.

Bibliography

511—America's Traveler Information Number Deployment Assistance Report #1: Business Models and Cost Considerations. 511 Deployment Coalition. <http://ops.fhwa.dot.gov/511/pdf/511bmcst.pdf>. (As of January 2010)¹

Business models and cost recovery are the critical factors for determining the sustainability of the travel information service and 511. The paper presents six models to address 511 and the entire advanced traveler information system (ATIS) program – public sector funded, subscription, pay-per-call, advertising and sponsorship, loss-leader or franchise, and hybrid business. These models are presented in terms of how they have been applied to ATIS to date and a qualitative evaluation of effectiveness. Cost issues and elements are also addressed.

511—America's Traveler Information Number Deployment Assistance Report #3: 511 and Homeland Security. 511 Deployment Coalition. <http://ops.fhwa.dot.gov/511/pdf/511secur.pdf>. (As of January 2010)

This white paper discusses the challenges and opportunities for 511 systems, their designers, and their operators arising from the September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon. It is organized around three topics and their sub-issues—customers (message content; accuracy, timeliness, and reliability of travel information; focus of travel information), institutional/organizational (public/private roles and responsibilities; resources; interagency coordination), and system performance (capacity considerations; response times/quality of service; system redundancy). Paper authors make six recommendations to the 511 Deployment Coalition.

511 Case Studies—Utah Commuter Link, U.S. Department of Transportation (U.S.DOT), Intelligent Transportation Systems Joint Program Office (ITS JPO), Washington, DC. http://ops.fhwa.dot.gov/511/about511/case_studies/utah_cs.htm. (As of January 2010)

This case study focuses on the State of Utah and its implementation of statewide 511 services, which became operational on December 18, 2001. However, as is evident in reading this document, the implementation is a work in progress. The intention is to concisely provide a current *snapshot* of the progress.

2004 Hurricane Season After-Action Report Lessons Learned Regarding Improved County and Municipal Hurricane Emergency Preparedness—Volusia County, Florida. Emergency Response Planning & Management, Inc., Volusia County Emergency Management Division, West Volusia, FL. <http://volusia.org/emergency/AfterAction.pdf>. (As of June 2005)

This report is an analysis of county and municipal emergency response and disaster recovery operations during the 2004 hurricane season. Its purpose is to first identify

¹ These dates following the citations reflect the date the Web site was accessed.

areas for improvement regarding inter-jurisdictional and inter-organizational operations and secondly to propose recommended actions to address these areas.

2006 Ohio Emergency Operations Plan, Emergency Support Function #1 — Transportation. Ohio Department of Public Safety, Ohio Department of Emergency Management, Columbus, OH. http://ema.ohio.gov/Documents/Ohio_EOP/Contents.pdf. (As of January 2010)

Document addresses the following areas of concern for the transportation function for the State of Ohio during emergencies:

- Assessing damage to, restoring, and maintaining land, air and water transportation routes during emergencies in coordination with governmental and private organizations as required.
- Transportation of state personnel, materials, goods, and services to emergency sites.
- Supporting evacuation and reentry operations for threatened areas.

Banaik, J. *A Decade of Partnership, Evolution and Growth: The I-95 Corridor Coalition.* I-95 Corridor Coalition, Springfield, VA. <http://www.i95coalition.net/i95/Default.aspx?TabId=85&grm2id=26>
Click on Publication Archive – link to download; paper is last entry on page. (As of February 2010)

This technical paper highlights the 10-year evolution of the I-95 Corridor Coalition—an alliance of transportation agencies, toll authorities, and related organizations, including law enforcement, from the State of Maine to the State of North Carolina, with an affiliate member in Canada. The Coalition provides a forum for key decision and policy makers to address transportation management and operations issues of common interest. This volunteer, consensus-driven organization enables its myriad state, local, and regional member agencies to work together to improve transportation system performance far more than they could working individually.

Beauchesne, A. M. *A Governor's Guide to Emergency Management, Volume One: Natural Disasters.* National Governor's Association Center for Best Practices, Washington, DC. www.nga.org/cda/files/govsguidehs2.pdf

This resource is intended to provide governors and their staffs with policies, procedures, and general information regarding emergency management. The guide outlines basic steps for disaster preparedness; describes tools and programs for states to assess their emergency management capabilities; and explains the importance of an aggressive pre-disaster mitigation strategy. The document also describes a governor's authority and powers during a declared emergency or disaster; provides an overview of the emergency management assistance compact; lays out a step-by-step process for declaring a major disaster; explains how to obtain federal assistance and what assistance is available, and identifies issues that governors must be aware of to facilitate the long-term recovery process.

A Guide to Evacuation in Northern Ireland, Office of the First Minister and Deputy First Minister, Northern Ireland. <http://cepu.nics.gov.uk/guidetoevacuation/index.htm>. (As of January 2009)

This guidance provides a framework used successfully in Northern Ireland for local evacuation planning. The framework takes account of accepted good practice, the emergency planning guidance produced by professional associations, and the lessons learned from incidents in recent years across the United Kingdom. Public transportation considerations are also addressed.

Science Applications International Corporation (SAIC). *A Guide to Highway Vulnerability Assessment for Critical Asset Identification and Protection (contractor's final report for Project 20-7/Task 151B.)* Transportation Research Board (TRB), Washington, DC. http://security.transportation.org/sites/security/docs/guide-VA_FinalReport.pdf. (As of May 2002)

This guide was developed as a tool for state DOTs to assess the vulnerabilities of their physical assets; develop possible countermeasures to deter, detect, and delay the consequence of terrorist threats; estimate the capital and operating costs of such countermeasures; and improve security operational planning for better protection against future acts of terrorism. For states just beginning the process, the guide provides a roadmap of issues to consider and actions to take during each phase of the vulnerability assessment. For states that have already begun the processes, the guide may provide alternate methods used by other states and federal agencies that could help validate the previous work.

Science Applications International Corporation (SAIC). *A Guide to Highway Vulnerability Assessment for Critical Asset Identification and Protection, Appendices A-F (Appendices for contractor's final report for Project 20-7/Task 151B.)*. Transportation Research Board (TRB), Washington, DC. http://security.transportation.org/sites/security/docs/guide-VA_Appendices.pdf. (As of May 2002)

This document is the Appendix to the Federal Highway Administration's Guide to Highway Vulnerability Assessment for Critical Asset Identification and Protection.

A Guide to Managing Stress in Crisis Response Professions. Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Mental Health Services (CMHS), U.S. Department of Health and Human Services (DHHS), Rockville, MD. <http://mentalhealth.samhsa.gov/publications/allpubs/SMA-4113/default.asp>

This easy-to-use pocket guide focuses on general principles of stress management and offers simple, practical strategies that can be incorporated into the daily routine of managers and workers. It also provides a concise orientation to the signs and symptoms of stress.

Parsons Brinckerhoff—PB Farradyne. *A Guide to Updating Highway Emergency Response Plans for Terrorist Incidents (contractor's final report for NCHRP Project 20-7/Task 151A)*. American Association of State Highway and Transportation Officials Security Task Force, Transportation Research Board, Washington, DC.

http://freight.transportation.org/doc/NCHRP_A.pdf. (As of May 2002)

This guide provides guidelines for planning for enhanced emergency response to terrorist incidents, especially those involving WMD. This guide is built on existing emergency management practice and is divided into two main parts. Part I, Background and Context, provides information on current emergency management and the new terrorist threats faced by the United States. Part II, Guidance for Updating State Plans, provides specific process guidance for updating existing DOT plans, procedures, roles, and activities in a checklist format. It suggests the most critical issues, indicates the key considerations to pursue with external entities, and identifies the areas in which the existing plans and procedures may require modification in light of the characteristics of terrorism scenarios.

A Method to Assess the Vulnerability of U. S. Chemical Facilities. U.S. Department of Justice (U.S.DOJ), Office of Justice Programs, National Institute of Justice (NIJ), Washington, DC. <http://www.ncjrs.org/pdffiles1/nij/195171.pdf>. (As of November 2002)

This report presents an overview of a prototype methodology used to evaluate the security of chemical facilities within the United States. This vulnerability assessment methodology identifies and assesses potential security threats, risks, and vulnerabilities and guides the end user in making security improvements. The use of the vulnerability assessment methodology is limited to preventing or mitigating terrorist or criminal actions, which would result in major consequences with significant national impact.

Cova, T. J. *A Network Flow Model for Lane-level Evacuation Routing*. Transportation Research Board, Washington, DC. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.130.726&rep=rep1&type=pdf>. (As of June 2009)

Standard lane-based evacuation routing concepts are presented in this document and a network flow model for lane-based routing during evacuation events is introduced. Results for sample networks are shown and a downtown Salt Lake City scenario is explored.

Transit Cooperative Research Program and the National Cooperative Highway Research Program, Research Results Digest: TCRP 65-NCHRP 288. *A New Vision of Mobility: Guidance to Foster Collaborative Multimodal Decision Making*. Transportation Research Board, Washington, DC. <http://www.trb.org/Main/Public/Blurbs/153859.aspx>. (As of January 2009)

This digest summarizes the results of Phase I of a cooperative research effort jointly funded by TCRP Project H-29 and NCHRP Project 8-45, *A New Vision of Mobility: Guidance to Foster Collaborative Multimodal Decision Making*. This research effort will produce two products: (1) a short document for popular distribution serving as a guidance resource in a *handbook* format and (2) a *compendium* of case examples upon which the guidance document is based. This digest summarizes results from project research to date, and demonstrate steps that can be taken to build successful alliances with other organizations, both public and private.

Guzman, M., *A Region Responds to Hurricane Isabel: The Nonprofit Sector's Role in Emergency Preparedness and Response*. The Community Foundation for the National Capital Region, Washington, DC.

http://www.regionalstewardship.org/ARS_forums/boston/Hurricane_Isabel.pdf. (As of October 2003)

As Hurricane Isabel moved north toward the Greater Washington Metropolitan region, nonprofit organizations prepared to serve their communities. Even during the storm, some kept their doors open to serve our area's most vulnerable residents. Once the storm had run its course, nonprofit organizations were active, helping area residents recover.

Science Applications International Corporation (SAIC). *A Study of the Impact of Nine Transportation Management Projects on Hurricane Evacuation Preparedness*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE//13940.html. (As of January 2009)

In May 2002, the Federal Highway Administration (FHWA) funded grants to nine southeastern states (Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, North Carolina, and Virginia) to improve transportation operations as part of their emergency management program for hurricanes evacuations. The purpose of this evaluation report is to draw some lessons learned from the activities pursued using the Federal grants that were received by the nine states. Lessons learned are presented for both public information and evacuation planning activities.

Accelerated Bridge Construction Technologies, 2007 Conference (Resources). U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://www.fhwa.dot.gov/bridge/accelerated/followup2007/>. (As of January 2010)

This Web site provides a link to the Accelerated Bridge Construction Technologies, 2007 Conference outcomes and follow-up activities includes the document "Rapid Bridge Construction: Seismic Connections Moderate-to-High Seismic Zones". The website also provides reports and presentations for the 2008 FHWA Accelerated Bridge Construction Conference—Highway for Life held in March 2008.

Lum, D. *Agency Coordination and Traffic Issues in Mississippi*. Mississippi Department of Transportation, Jackson, MS. http://san-antonio.tamu.edu/trbanb10-3/Resources/Mississippi_2003.pdf. (As of June 2009)

This PowerPoint presentation provides an overview of the topics discussed at the Hurricane Evacuation Workshop held at the National Hurricane Conference 2003, held in April 2003 in New Orleans, LA. Additionally, traffic issues and solutions are described for the town of Hattiesburg, where all Gulf Coast routes converge.

An ADA Guide for Local Governments—Making Community Emergency Preparedness and Response Programs Accessible to People with Disabilities. Civil Rights Division, U.S. Department of Justice (DOJ), Washington, DC.
<http://www.usdoj.gov/crt/ada/emergencyprep.htm>. (As of January 2009).

One of the most important roles of local government is to protect its citizenry from harm, including helping people prepare for and respond to emergencies. Making local government emergency preparedness and response programs accessible to people with disabilities is a critical part of this responsibility. Making these programs accessible is also required by the Americans with Disabilities Act of 1990 (ADA).

Stoup, G. M., M. R. Slavik, and M. S. Schnoke. *An Analysis of the Consequences of the August 14th 2003 Power Outage and its Potential Impact on Business Strategy and Local Public Policy.* Mirifex Systems and The Center for Regional Economic Issues (REI) at Case Western Reserve University's Weatherhead School of Management, Strongsville, OH and Cleveland, OH
<http://www.acp-international.com/southtx/docs/ne2003.pdf>. (As of February 2004)

This paper reports on the findings of an industry survey conducted of 142 companies during the months immediately following the August 14th blackout. The purpose for conducting this investigation was to gain a better understanding of the true costs to businesses from the blackout and to stimulate new thinking on what policies and strategies might help business and governments protect themselves from the risk of experiencing a similar disruption in the future.

Management and Operations Committee of the ITS Council. *An Annotated Outline for a Traffic Management Center Operations Manual.* Institute of Transportation Engineers (ITE), Washington, DC.
http://tmcdfs.ops.fhwa.dot.gov/cfprojects/uploaded_files/ITE%20OM%20Annotated%20Outline.pdf

This draft TMC Management and Operations Manual outline is meant to serve as a model *checklist* for development of similar manuals used in deployed environments. The purpose of the outline is to provide a reference for agencies that are writing and/or updating their own operations manuals for Traffic Management Centers. In practice a document of this nature may be structured in multiple parts but for the purpose of this outline only one document is illustrated. The ITS Council hopes that this outline will serve as a helpful checklist for development of a tailored M&O manual.

Hurricane Isabel Assessment Team. *An Assessment: Virginia's Response to Hurricane Isabel.* System Planning Corporation (SPC), TriData Division, Arlington, VA.
http://www.vdem.state.va.us/newsroom/disasters/isabel2003/Hurricane_Isabel_Assessment.pdf. (As of December 2003)

Hurricane Isabel directly affected 99 counties, cities, and towns in Virginia. Damage from rain; storm surge; wind; and, significant tree damage was responsible for cascading affects that taxed disaster response systems in both state and local government. Governor Mark Warner appointed a Hurricane Isabel Assessment

Team to help the Commonwealth and local governments identify the problems that occurred in responding to Hurricane Isabel. The team conducted a survey, interviews and researched reports by Virginia Department of Emergency Management. This summation provides recommendations that will form the basis for strategic and systematic improvements in the Commonwealth's and in local governments' ability to handle future events and to coordinate resources so that needs are met as efficiently as possible and the impact of major events can be mitigated.

An Introduction to Standards for Road Weather Information Systems (RWIS). U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Road Weather Management Program, Washington, DC.
http://ops.fhwa.dot.gov/weather/publications/rwis_brochure.pdf. (As of July 2002)

This brochure describes three categories of standards being considered for RWIS applications: citing standards, calibration standards, and communication standards. Note that the term "standard" is used in this brochure to simplify the presentation of the material. It refers to guidelines, recommended procedures, protocols, and other practices that formalize some of the processes involved in deploying and maintaining RWIS sensors. The standards described here are still being developed and are not mandated by the U.S. DOT. The U.S. DOT encourages agencies to use this brochure as a starting point to learn about RWIS standards and to consider how they might use these standards to reinforce their own RWIS operations.

Christen, H., P. Maniscalco, A. Vickery, and F. Winslow. *An Overview of Incident Management Systems*. John F. Kennedy School of Government, Harvard University, Perspectives on Preparedness, No. 4, Cambridge, MA.
http://belfercenter.ksg.harvard.edu/files/an_overview_of_incident_management_systems.pdf. (As of September 2010)

One solution to the potential problems of divided leadership, parallel chains of command, operational conflicts, competing resource demands, and unfamiliar professional terminology is an Incident Management System (IMS). An IMS is designed to manage complex or multi-site emergency events. This paper provides an overview of the purposes and principles in IMS. It is focused on discussing the history and development of IMS, unified management, span of control, IMS organizational levels, and staffing and training issues.

Lambert, L., and B. Wolshon. *Analysis of Contraflow Evacuation Initiation and Termination Policies*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.

This presentation addresses contraflow evacuation initiation and termination policies as well as recent Louisiana State University evacuation-related research. Analyzed are segments as they are affected by current evacuation procedures. The presentation also discusses GRUF, a project that compares and contrasts contraflow evacuation plans in order to outline protocols of *triggers* or *cut-offs* that would initiate or terminate its use. Implementation efficiency and economics are emphasized.

PBS&J. *Analysis of Florida's One-Way Operations for Hurricane Evacuation*. Florida Department of Transportation (FDOT), Tallahassee, FL. http://san-antonio.tamu.edu/trbanb10-3/Resources/Analysis_of_Florida_s_One-Way_Operations_for_Hurricane_Evacuation.pdf. (As of March 2002)

The largest evacuation in Florida's history occurred as the result of Hurricane Floyd in September 1999. Long evacuation travel times raised questions as to the need and feasibility of reverse laning limited access facilities to reduce these times. To address these issues, Governor Jeb Bush appointed a Governor's Hurricane Evacuation Task Force. The Task Force assigned a traffic management team the responsibility of conducting meetings around the state and identifying routes that might warrant one-way evacuation operations during a major hurricane threat.

Annex S Transportation, State of Texas Emergency Management Plan. Texas Department of Public Safety, Governor's Division of Emergency Management, Austin, TX. ftp://ftp.txdps.state.tx.us/dem/plan_state/state_annex_s.pdf. (As of September 2006)

The purpose of this annex is to define the organization, operational concepts, responsibilities, and procedures to accomplish state emergency transportation requirements in Texas. This annex is applicable to all locations and to all agencies, organizations, and personnel with transportation emergency support function (ESF) responsibilities.

Are You Ready? A Guide to Citizens Preparedness. Federal Emergency Management Agency (FEMA), Washington, DC. http://www.fema.gov/pdf/areyouready/areyouready_full.pdf. (As of June 2009)

This guide contains step-by-step advice on how to prepare for, respond to and recover from disasters. While this guide focuses on the physical hazards of disasters, there are also the emotional effects of losing a loved one, a home, or treasured possessions. When under stress, people can become irritable, fatigued, hyperactive, angry, and withdrawn. Children and older adults are especially vulnerable to post-disaster psychological effects.

Arlington County After-Action Report on the Response to the September 11 Terrorist Attack on the Pentagon. Titan Systems Corporation, San Diego, CA. <http://www.911investigations.net/IMG/pdf/doc-1004.pdf>. (As of May 2002)

This After-Action Report (AAR) describes the activities of Arlington County and the supporting jurisdictions, government agencies, and other organizations in response to the September 11, 2001, terrorist attack on the Pentagon. This AAR conveys the response, rescue, and recovery activities as seen through the eyes of the response community.

Mitretek Systems, Inc. *Best Practices for Road Weather Management*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE//13828.html. (As of January 2009).

While there is a perception that little can be done about weather, three types of

mitigation measures—control, treatment, and advisory strategies—may be employed in response to environmental threats and impacts. These management practices are used in response to various threats including fog, high winds, snow, rain, ice, flooding, tornadoes, hurricanes, and avalanches. This best practices guide, produced on interactive CD, contains case studies of systems and applications employed by traffic, emergency, and winter maintenance managers to improve roadway operations under inclement weather conditions. Each case study demonstrates the entire information thread, from environmental information to system performance information. The CD also contains online resources and a listing of road weather publications.

Houston, N. *Best Practices in Emergency Transportation Operations Preparedness and Response, Results of the FHWA Workshop Series, Annotated*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.ops.fhwa.dot.gov/publications/etopr/best_practices/etopr_best_practices.pdf. (As of December 2006)

Between May 2002 and June 2005, the Federal Highway Administration (FHWA) and Booz Allen Hamilton conducted workshops on Transportation Operations Preparedness and Response in 30 regions across the United States. The objectives of these workshops were to:

- Increase participant awareness of the critical processes, issues, and activities that may arise during and following an emergency, and of the possible approaches for addressing them.
- Enhance working relationships among personnel from multiple organizations responsible for emergency preparedness and response in each of the 30 regions.
- Identify areas for improvement for transportation emergency response planning and readiness in each of the 30 regions. Determine next steps to address these areas.
- Provide input to transportation emergency preparedness guidance material being prepared at the national level.

The purpose of this report is to consolidate the best practices identified during the 30 workshops.

Blackout 2003: How Did It Happen and Why? Committee on Energy and Commerce, House of Representatives, 108th World Congress—Serial No. 108-54, Washington, DC. <http://republicans.energycommerce.house.gov/108/Hearings/09032003hearing1061/hearing.htm>. (As of January 2010)

This publication contains testimonies before the Committee on Energy and Commerce, House of Representatives, One Hundred Eighth Congress regarding the Blackout of 2003.

Catastrophic Hurricane Evacuation Plan Evaluation: A Report to Congress—Chapter 5: Findings and Recommendations. U.S. Department of Transportation (U.S.DOT) and, the U.S. Department of Homeland Security (DHS), Washington, DC. <http://www.fhwa.dot.gov/reports/hurricaneevacuation/chapter5.htm>. (As of January 2009).

This section of the *Catastrophic Hurricane Evacuation Plan Evaluation: A Report to Congress* summarizes major findings from the study for each of the key elements in evacuation planning and operations. Recommendations and current actions related to these findings are also discussed.

Chemical Protective Clothing for Law Enforcement Patrol Officers and Emergency Medical Services when Responding to Terrorism with Chemical Weapons. U.S. Department of the Army, United States Army Soldier and Biological Chemical Command (SBCCOM), Aberdeen Proving Ground, MD.
http://www.edgewood.army.mil/downloads/cwirp/ECBC_cwirp_cpc_lepo_ems_report.pdf
(As of November 1999)

This report contains information related to the testing of commercially available chemical protective suits. The information contained in this report is intended for use by law enforcement patrol officers in the event of a terrorist attack that involves the use of Chemical Warfare Agents (CWA). Additionally, this information may also be applicable for Emergency Medical Services (EMS) personnel and other first responders at this type of incident.

City of Phoenix, Arizona—Phoenix Advanced Transportation Management System. National Transportation Communications for ITS Protocol—NTCIP 9004 v01.05, Washington, DC. http://www.ntcip.org/library/documents/pdf/9004_090999.pdf. (As of November 1999)

Two Dynamic Message Sign (DMS) projects and one traffic signal control project were selected for this study during 1999. Additional projects may be investigated in FY 2000. The material for these case studies were drawn from interviews with individuals who were directly involved in the NTCIP implementation and from project-related documents such as specifications, test plans, and procurement documents. The interviews, conducted by individuals familiar with the NTCIP, were structured around a survey prepared for these case study investigations.

City of Phoenix, Arizona—Phoenix Advanced Transportation Management System Amendment 1., National Transportation Communications for ITS Protocol—NTCIP 9004-Amendment 1 v6, Washington, DC.
http://www.ntcip.org/library/documents/pdf/9004amend1v0106_phoenix.pdf. (As of January 2003)

The initial deployment of NTCIP-conformant equipment by the City of Phoenix, Arizona (Agency) was documented in a case study of their Advanced Transportation Management System (ATMS) implementation in NTCIP 9004 Version 01.05, dated November 16, 1999. The focus of that case study was the implementation of signal controllers conforming to the NTCIP 1202—NTCIP Actuated Signal Control (ASC) standard. Now that some time has elapsed since that initial effort, AASHTO, FHWA, ITE, and NEMA are sponsoring this case study update. This effort, presented as a case study amendment, focuses on insights gained over the three years of deployment since the initial case study was performed. Specifically, this amendment will address Agency issues concerning current implementation efforts and their needs based upon experience gained through NTCIP deployment experience.

City of Phoenix, Arizona—Successful ATMS/NTCIP Center to Field Integration. National Transportation Communications for ITS Protocol—NTCIP 0301, Washington, DC. http://www.ntcip.org/library/documents/pdf/pr_phoenix_atms_0301.pdf. (As of January 2003)

The City of Phoenix, AZ is announcing the successful integration of their Advanced Traffic Management Systems (ATMS) with Peek Corporation's TS-2 controllers. Phoenix's ATMS / NTCIP is a fully operational system using a communications protocol that supports both low-speed and high-speed communications. This feature gives public agencies the flexibility to use existing low-speed phone lines in order to reduce costs or to use high-speed communications if available.

Coalition Connection, I-95 Corridor Coalition [Web site]. Center for Advanced Transportation Technology, University of Maryland, College Park, MD. <http://www.i95coalition.org/i95/Home/tabid/36/Default.aspx> (As of February 2010)

The I-95 Corridor Coalition is an alliance of transportation agencies, toll authorities, and related organizations, including law enforcement, from the State of Maine to the State of Florida, with affiliate members in Canada. The Coalition provides a forum for key decision and policy makers to address transportation management and operations issues of common interest. This website provides links to the extensive list of Coalition reports and publications.

Combined Transportation, Emergency, & Communication Center (CTECC). Texas Department of Transportation (TxDOT), ITS Texas Annual Meeting, Austin, TX. <http://itstexas.tamu.edu/presentations/2003annualmeeting/presentation/Brian%20Burk.pdf>. (As of November 2003)

This presentation during the "Changes of the Horizon in Austin, TX" session of the Annual Meeting focuses the needs of Texas Department of Transportation; and the operations, concept, goals and objectives, facilities and staff of the Combined Transportation, Emergency, & Communication Center (CTECC).

Houston, N. *Common Issues in Emergency Transportation Operations Preparedness and Response, Results of the FHWA Workshop Series.* U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://ops.fhwa.dot.gov/publications/etopr/common_issues/etopr_common_issues.pdf. (As of February 2007)

Between May 2002 and June 2005, the Federal Highway Administration (FHWA) and Booz Allen Hamilton conducted workshops on Transportation Operations Preparedness and Response in 30 regions across the United States. The objectives of these workshops were to:

1. Increase participant awareness of the critical processes, issues, and activities that may arise during and following an emergency, and of the possible approaches for addressing them.
2. Enhance working relationships among personnel from multiple organizations

responsible for emergency preparedness and response in each of the 30 regions.

3. Identify areas for improvement for transportation emergency response planning and readiness in each of the 30 regions. Determine next steps to address these areas.
4. Provide input to transportation emergency preparedness guidance material being prepared at the national level.

This report consolidates the common issues identified during the 30 workshops.

Zimmerman, C., P. Bolton, M. Raman, T. Kell, et al. *Communicating With the Public Using ATIS During Disasters: A Guide for Practitioners*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.ops.fhwa.dot.gov/publications/atis/atis_guidance.pdf. (As of April 2007)

The document discusses what we know about human behavior in disaster situations based on findings from several decades of research. That perspective can help in maximizing the effectiveness of traveler information communications. The current use of traveler information in managing normal incidents and planned special events is examined as a starting point for gauging the processes and technologies that are in place today. Five case studies of actual disasters in Georgia, California, Nevada, Utah, and Washington State show the role that traveler information has played in current practice and provide lessons for others. A concept of operations is presented that characterizes the flow of information among the people, organizations, and technologies comprising traveler information dissemination during disasters.

Lewis, C. *Community Shelter-In-Place Program*. City of Harrisonburg/Rockingham County Local Emergency Planning Committee (LEPC), Harrisonburg, VA. <http://www.jmu.edu/lepc/CommunitySIP%20presentation.ppt>. (As of February 2004)

This presentation provides an overview of the City of Harrisonburg and Rockingham County, VA's Shelter-In-Place Program including general information on sheltering-in-place; specific information on how local residents will be notified in the event of an emergency; and, a detail of the 5 actions steps to remember.

Pearce, V. *Compilation of Actions Taken by Surveyed Transportation Agencies at Each Level of the Homeland Security Advisory System*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://www.transportation.org/sites/security/docs/HSAScomp.pdf>. (As of October 2002)

This report contains a compilation of the actions taken by surveyed agencies at each of the alert levels of the in the Homeland Security Advisory System. This document has been prepared by Vince Pearce in the Office of Operations at the Federal Highway Administration, at the request of the AASHTO Transportation Security Task Force. The request for inputs was made to members of the AASHTO Task Force, and is not intended to represent a comprehensive survey of all of the nation's state and local transportation agencies.

Comprehensive Emergency Management Plan 2004, Appendix I: Emergency Support Function 1—Transportation. Florida Division of Emergency Management, Tallahassee, FL. <http://www.floridadisaster.org/documents/CEMP/Appendices/ESF%201.pdf>. (As of February 2004)

The purpose of Emergency Support Function 1 is to provide, in a coordinated manner, the resources (human, technical, equipment, facility, materials and supplies) of member agencies to support emergency transportation needs during an emergency/disaster situation. ESF 1 resources will be provided through the State Emergency Operations Center when activated. ESF 1 may also obtain resources (human, technical, equipment, facility, materials, and supplies) through agency contractors, vendors, and suppliers. Resources may also be obtained from agency related local, state, regional, national, public, and private associations or groups.

Comprehensive Preparedness Guide, CPG 101, Producing Emergency Plans: A Guide for All-Hazards Emergency Operations Planning for State, Territorial, Local, and Tribal Governments. U. S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC.

http://www.fema.gov/pdf/about/divisions/npd/cpg_101_layout.pdf. (As of January 2010)

CPG 101 replaces an earlier document with similar purpose titled *State and Local Guide (SLG) 101, Guide for All-Hazard Emergency Operations Planning*, dated September 1996. This Guide clarifies the preparedness, response, and short-term recovery planning elements that warrant inclusion in state and local EOPs. It offers FEMA's best judgment and recommendations on how to deal with the entire planning process—from forming a planning team to writing the plan. It also encourages emergency managers to address all of the hazards that threaten their jurisdiction in a single EOP instead of relying on standalone plans.

This Guide should help state and local emergency management organizations produce EOPs that:

- Serve as the basis for effective response to any hazard that threatens the jurisdiction;
- Facilitate integration of mitigation into response and recovery activities; and
- Facilitate coordination with the federal government during catastrophic disaster.

Wolshon, B. *Contraflow Traffic Operations for Hurricane Evacuation.* Louisiana State University (LSU) Hurricane Center, Department of Civil and Environmental Engineering, Baton Rouge, LA. http://san-antonio.tamu.edu/trbanb10-3/Resources/LSU_Contraflow.pdf. (As of June 2009)

In order to promote the adequate preparation and planning for hurricane emergencies, the LSU Hurricane Center has provided information on hurricanes and other hazards and their impacts on natural, built and human environments. The information presented includes the results of studies conducted at the Hurricane Center. Included in the presentation is information regarding the plans and policies of evacuation and contraflow activities during hurricane emergencies. Also included is a list of identified contraflow segments and evacuation routes.

Little, R. *Controlling Cascading Failure—Understanding the Vulnerability of Interdependent Infrastructures*. National Research Council, The National Academies, Washington, DC. (As of October 2001)

This PowerPoint presentation presented at the First Annual Conference on Infrastructure Priorities identifies critical infrastructures; the scope of their vulnerabilities; types of failures; how to understand failures in complex systems; and the need for risk assessment and management.

Urbanik, T., D. Humphreys, B. Smith, and S. Levine. *Coordinated Freeway and Arterial Operations Handbook*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://www.tfhr.gov/its/pubs/06095/06095.pdf>. (As of May 2006)

Managing and operating freeways and adjacent arterials in a proactive and comprehensive manner, from a system user's perspective, is a major step toward operating all modes of the transportation system at maximum efficiency. The focus of this guide is on operating freeways and adjacent arterials together in a coordinated manner that treats these roadways not as separate entities, but as an interconnected traffic operations corridor. The purpose of this document is to provide direction, guidance, and recommendations for transportation managers, engineers, and planners on how to proactively and comprehensively coordinate freeway and arterial street operations.

Wood, B. A. *Corpus Christi TxDOT District Hurricane Evacuation Needs*. Texas Department of Transportation (TxDOT), Corpus Christi District, Corpus Christi, TX. http://san-antonio.tamu.edu/trbanb10-3/Resources/Texas_2003_-_Part_1.pdf. (As of April 2003)

This PowerPoint presentation presented at the National Hurricane Conference in New Orleans, LA in April 2003 describes the challenges and needs, including education of the general public and signage, for effective evacuation in the Corpus Christi region.

Crisis Information Management Software (CIMS) Feature Comparison Report. U.S. Department of Justice, Office of Justice Programs, National Institute of Justice (NIJ), Washington, DC. <http://www.ncjrs.org/pdffiles1/nij/197065.pdf>. (As of October 2002)

CIMS, the software found in emergency management operation centers, supports the management of crisis information and the corresponding response by public safety agencies. The purpose of this report is to compare and contrast commercially available CIMS. Software was identified through a survey of members of the National Emergency Managers Association. The report does not contain summary recommendations to certify or recommend a particular product.

Boyd, A., P. Maier, and J. Caton. *Critical Incident Management Guidelines*. U.S. Department of Transportation (U.S.DOT), Federal Transit Administration (FTA), Office of Safety and Security, Washington, DC. http://transit-safety.fta.dot.gov/publications/Emergency/CriticalIncidents/PDF/Critical_Incident_Management_Guidelines.pdf. (As of July 1998)

These Guidelines support the efforts of public transportation systems to manage emergencies and disasters, whether they occur on transit property or in the communities served by the systems. Specific emergency management tools and incident response organizations are explained. Case studies and best practices from both the transit industry and the Federal Emergency Management Agency are provided.

Critical Incident Protocol—A Public and Private Partnership. Michigan State University, Lansing, MI. <http://www.cip.msu.edu/>. (As of March 2010)

This publication discusses how the public and private sectors can work together to prepare for and manage emergency events. Important elements include planning, mitigation, business recovery, lessons learned, best practices, and plan exercising. Checklists and a glossary are provided to support interagency coordination and community preparedness.

Manzi, C., M. Powers, and K. Zetterland. *Critical Information Flows in the Alfred P. Murrah Building Bombing: A Case Study*. Oklahoma City National Memorial Institute for the Prevention of Terrorism (MIPT), Oklahoma City, OK.

This document reviews internal and external information and communication flows affecting the response to the April 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City. It identifies issues and questions relating to the roles of communication and information dissemination in U.S. counterterrorism strategies. This publication is not a critique of response efforts during this incident.

Critical Infrastructure Protection Priorities: The Built Environment. Civil Engineering Research Foundation (CERF), Washington, DC. <http://www.tisp.org/index.cfm?pk=download&pid=10261&id=10842>. (As of September 2002)

A workshop on Critical Infrastructure Protection Priorities sponsored by a diverse group of associations and agencies was hosted by the Executive Office of the President's Office of Science and Technology Policy (OSTP) September 23–24, 2002. Over 90 senior industry leaders and government officials came to exchange facts and information on the security of the built environment. They worked to address key topics of concern, raised in publications such as *Making the Nation Safer*, by the National Research Council (NRC).

Rollins, J. *CRS Report for Congress: Fusion Centers: Issues and Options for Congress*. Congressional Research Service, Washington, DC. <http://www.fas.org/sgp/crs/intel/RL34070.pdf>. (As of January 2008)

The creation of post-9/11 intelligence/information fusion centers does not represent a totally new concept, but suggests an extension of pre-9/11 state and local law enforcement intelligence activities. Most state police/bureau of investigation agencies have run intelligence or analytic units for decades. Many of the fusion centers examined for this report were the outgrowth of those units, prompting some to refer to fusion centers as 'state police intelligence units on steroids.' Conceptually, fusion centers differ from their predecessors in that they are intended to broaden sources of data for analysis and integration beyond criminal intelligence, to include federal intelligence as well as public and private sector data. Furthermore, fusion centers broaden the scope of state and local analysis to include homeland security and counterterrorism issues.

Faust, T. *Delaware Incident Event Transportation Management*. Delaware Department of Transportation (DDOT), Dover, DE. http://san-antonio.tamu.edu/trbanb10-3/Resources/Delaware_2003.pdf. (As of June 2009)

This brief PowerPoint presentation provides information on the Delaware Department of Transportation and explains the function and challenges of the Emergency Management Team.

Stopher, P., and R. Alsnih, *Development of a Dynamic Planning Tool for Emergency Evacuations under Australian Conditions*. Institute of Transport Studies, The University of Sydney, Australia, Sydney, Australia. http://san-antonio.tamu.edu/trbanb10-3/Resources/Stopher_Presentation__2__2004.pdf. (As of 2004)

This document, compiled by the Institute of Transport Studies, University of Sydney, outlines the findings of the Emergency Management Project funded by Emergency Management Australia. Issues to be considered by evacuation planners in developing emergency response plans are discussed. Of importance is the understanding of evacuation behavior and the common tendencies of evacuees. The document recommends focus groups and surveys to poll the population that may be asked to evacuate and the development of a Decision Support System (DSS).

Dotson, L. J., and J. Jones. *Development of Evacuation Time Estimate Studies for Nuclear Power Plants*. Sandia National Laboratories; U.S. Nuclear Regulatory Commission, Washington DC. <http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6863/cr6863.pdf>. (As of January 2005)

Since the publication of NUREG/CR-4831, *State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants*, technologies supporting the development of Evacuation Time Estimates (ETEs) have substantially changed and additional evacuation considerations have emerged. ETEs are part of the planning basis for each nuclear power plant (NPP), and as such, ETE studies are required to be performed by licensees to estimate the time needed to evacuate the public in the unlikely event of a serious accident. As advancements in new technologies that support evacuations and evacuation planning continue, and as new information on evacuations becomes available, it is important that these technologies and information be considered in development of an ETE.

Barrett, M. L., J. D. Crabtree, J. G. Pigman, and J. R. Walton. *Development of Kentucky's Highway Incident Management Strategic Plan*. Kentucky Transportation Center, College of Engineering, University of Kentucky, Lexington, KY. http://www.ktc.uky.edu/Reports/KTC_05_08_SPR288_05_01F.pdf. (As of May 2005)

The objective of this project was to develop a strategic plan that provides a vision and strategy for significantly improving all aspects of incident management. This report identifies the current and best practices for highway incident management in the United States and in Kentucky and establishes a vision for the futures of all highway incident management in Kentucky. The Plan developed through the efforts of this project consists of a mission statement, 4 goals, 16 objectives and 49 action strategies. When implemented, the action strategies will help Kentucky achieve its primary goals for incident management: 1) improved safety of responders, highway worker and motorists; 2) reduced traffic delay; 3) improved motorist awareness; and 4) improved responder and highway worker preparedness.

Economic Analysis Primer. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Office of Asset Management, Washington, DC. <http://www.fhwa.dot.gov/infrastructure/asstmgmt/primer.pdf>. (As of August 2003)

This primer is intended to provide a foundation for understanding the role of economic analysis in highway decision making. It is oriented toward state and local officials who have responsibility for ensuring that limited resources get targeted to their best uses and who must account publicly for their decisions. It presents economic analysis as an integral component of a comprehensive infrastructure management methodology that takes a long-term view of infrastructure performance and cost. The primer is nontechnical in its descriptions of economic methods, but it encompasses a full range of economic issues that are of potential interest to transportation officials.

DeBasio, A. J., T. J. Regan, M. F. Zirker, K. S. Fichter, and K. Lovejoy. *Effects of Catastrophic Events on Transportation System Management and Operations: August 2003 Northeast Blackout—New York City*. U.S. Department of Transportation (U.S.DOT), Intelligent Transportation Systems Joint Program Office (ITS JPO), Washington, DC. http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE/14023_files/14023.pdf. (As of March 2004)

This report documents the actions taken by transportation agencies in response to the August 14, 2003, Blackout throughout the Northeast. It is part of a larger effort to examine the impacts of catastrophic events on transportation system facilities and services and the role of intelligent transportation systems (ITS) in emergencies. It also highlights the importance of good communications between transportation agency staff and the public safety officials who are the first responders during catastrophic events.

John A. Volpe National Transportation Systems Center. *Effects of Catastrophic Events on Transportation System Management and Operations: New York City—September 11, 2001*. U.S. Department of Transportation (U.S.DOT), Intelligent Transportation Systems

Joint Program Office (ITS JPO), Washington, DC.

http://ntl.bts.gov/lib/jpodocs/repts_te/14129.htm. (As of January 2009)

This appendix to *Effects of Catastrophic Events on Transportation System Management and Operations: New York City—September 11, 2001* presents the project literature review (including web links to sites of interest and further information), the detailed event chronology; explanations of agency relationships; listing of related activities being performed by other agencies; general procedures for federal disaster declarations; and brief overview of FEMA's incident command system.

Science Applications International Corporation (SAIC). *Effects of Catastrophic Events on Transportation System Management and Operations: The Pentagon and the National Capitol Region, September 11, 2001*. U.S. Department of Transportation (U.S.DOT), Intelligent Transportation Systems Joint Program Office, Washington, DC.

<http://www.iacptechnology.org/IncidentManagement/The%20Pentagon%20and%20the%20National%20Capitol%20Region%20-%209-11-01.pdf>. (As of March 2002)

This report documents the actions taken by transportation agencies in response to the September 11, 2001 attacks on the Pentagon. It presents a chronological reconstruction of the attack, and its impacts on transportation providers in the national capital region, including incident recognition, emergency evacuation, system shut downs and start-ups, and coordination with local responders.

DeBlasio, A. J. *Effects of Catastrophic Events on Transportation System Management and Operations*. Workshop on Optimizing Resource Allocation for Transportation Infrastructure Protection, University of Wisconsin, Madison WI.

<http://www.chpra.wisc.edu/pdfs/talkdeblasio.pdf>. (As of May 2004)

The Federal Highway Administration (FHWA) commissioned a series of four case studies to examine the effects of catastrophic events on transportation system management and operations. Each of the case studies examined a specific event and the regional response. The events included terrorist attacks in New York City and Washington, DC, on September 11, 2001; an earthquake in the Los Angeles region; and a rail tunnel fire in Baltimore. This cross cutting study summarizes the surface transportation activities associated with four catastrophic events and the lessons learned from each. The case studies have provided material for a series of Transportation Response and Recovery Workshops developed by the FHWA and held in major metropolitan areas around the country.

Wolshon, B., and B. H. Meehan. *Emergency Evacuation: Ensuring Safe and Efficient Transportation Out of Endangered Areas*. Transportation Research Board, TR News, No. 224, Washington, DC. <http://gulliver.trb.org/publications/trnews/trnews224.pdf>. (As of January 2003)

Two recent events have demonstrated the critical need to improve the efficiency and management of evacuations: Hurricane Floyd along the coastal areas of the southeastern U.S. in 1999, and the terrorist attacks in New York City and Washington, D.C., on September 11, 2001. Programs are under way to improve transportation operations during the evacuation of an area under threat of natural or

manmade disaster. This article reviews the initiatives, strategies, techniques, and technologies to keep the transportation infrastructure from being overwhelmed by evacuation-level traffic demand.

Emergency Management Accreditation Program (EMAP). Emergency Management Accreditation Program, Lexington, KY. <http://www.emaponline.org/>. (As of November 2004)

The Emergency Management Accreditation Program (EMAP) is a voluntary assessment and accreditation process for state/territorial, tribal, and local government emergency management programs. During 2003-05, EMAP is conducting baseline assessments of all state and territorial emergency management programs.

Wahle, T., and G. Beatty. *Emergency Management Guide for Business & Industry*, U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://www.fema.gov/pdf/business/guide/bizindst.pdf>. (As of October 1993)

This guide provides step-by-step advice on how to create and maintain a comprehensive emergency management program. It can be used by manufacturers, corporate offices, retailers, utilities or any organization where a sizable number of people work or gather. Whether you operate from a high-rise building or an industrial complex; whether you own, rent or lease your property; whether you are a large or small company; the concepts in this guide will apply.

Emergency Management Systems [Web site]. U.S. Department of Transportation (U.S.DOT), Research and Innovative Technology Administration (RITA), Washington, DC. http://www.its.dot.gov/evaluation/docs_ems.htm. (As of January 2009)

The Research and Innovative Technology Administration (RITA) coordinates the U.S. Department of Transportation's (DOT's) research programs and is charged with advancing the deployment of cross-cutting technologies to improve our Nation's transportation system. This section of the RITA Web site provides an extensive list of emergency management system documentation.

Emergency Operations Plan, Volume 1: Basic Plan. Virginia Department of Emergency Management, Richmond, VA. <http://www.vdem.state.va.us/library/plans/index.cfm>. (As of January 2009)

The Basic Plan part of the Commonwealth of Virginia Emergency Operations Plan (State EOP) is an overview of the state's emergency response organization and policies. It provides for state-level emergency operations in response to any type of disaster or large-scale emergency affecting Virginia. It assigns duties and responsibilities to departments, agencies, and support organizations for disaster mitigation, preparedness, response, and recovery. It also provides the needed framework within which more detailed emergency plans and procedures can be developed and maintained by both state agencies and local governments.

Emergency Preparedness and Individuals with Disabilities [Web document]. U.S. Department of Transportation, Washington, DC.
<http://www.dotcr.ost.dot.gov/asp/emergencyprep.asp>. (As of January 2009)

As the United States population grows, there is greater demand for better highways, roads, subways, and air travel. Ongoing enhancements to the Nation's transportation systems must be coupled with efforts to ensure that the needs of people with disabilities are addressed, especially in the event of an emergency. The critical needs of individuals with disabilities during an emergency include the evacuation of transit systems, getting to safe shelter in the event of a natural disaster, and full access to transportation systems when there is a need to evacuate a particular location. This web page contains basic information on emergency preparedness, transportation accessibility, and evacuation methods for certain modes of transportation, such as transit and rail systems. It is designed to be an emergency transportation preparedness resource for individuals with disabilities, their family members, and care givers. Additionally, this page includes useful information for transportation providers on addressing the unique needs of people with disabilities during an emergency.

Emergency Preparedness and Response Could Better Integrate Information Technology with Incident Response and Recovery. U.S. Department of Homeland Security (DHS), Office of Information Technology, Washington, DC.
http://www.dhs.gov/xoig/assets/mgmt/rpts/OIG_05-36_Sep05.pdf. (As of September 2005)

This report assesses the strengths and weaknesses of the information technology that the Emergency Preparedness and Response Directorate uses to support incident response and recovery operations. It is based on interviews with employees and officials of relevant agencies and institutions, direct observations, and a review of applicable documents.

Emergency Preparedness Initiative Guide on the Special Needs of People with Disabilities for Emergency Managers, Planners & Responders. National Organization on Disability, Washington, DC. <http://www.nod.org/resources/PDFs/epiguide2005.pdf>. (As of January 2005)

This Guide highlights key disability concerns to those officials and experts responsible for emergency planning in their communities, and assists them in developing plans that will take into account the needs and insights of people with disabilities before, during, and after emergencies. It also is designed to help emergency managers, planners, and responders make the best use of resources to include all citizens of the community in emergency preparedness plans. In this Guide are steps that every emergency preparedness manager can consider to ensure that the needs and situations of people with disabilities are taken into account in all four phases of emergency management: mitigation, preparedness, response, and recovery.

Emergency Response Guidebook—2008. U.S. Department of Transportation (U.S.DOT), Transport Canada (TC), and the Secretariat of Communications and Transportation of Mexico (SCT), Washington, DC, Ottawa, ON, and Coyoacan, MX.

<http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/ergmenu.aspx> (As of June 2008)

The Emergency Response Guidebook (ERG) was developed jointly by the U.S. Department of Transportation, Transport Canada, and the Secretariat of Communications and Transportation of Mexico for use by firefighters, police, and other emergency services personnel who may be the first to arrive at the scene of a transportation incident involving hazardous material. The ERG is primarily a guide to aid first responders in (1) quickly identifying the specific or generic classification of the material(s) involved in the incident, and (2) protecting themselves and the general public during the initial response phase of the incident.

Emergency Responder Guidelines. U.S. Department of Homeland Security (DHS), Office for Domestic Preparedness (ODP), Washington, DC.
<http://www.homelandsecurity.org/bulletin/emergencyresponderguidelines.pdf>. (As of August 2002)

The Office of Domestic Preparedness has prepared these Emergency Responder Guidelines to help provide America's response community with a baseline understanding of the training necessary to effectively and safely respond to an act of terrorism involving the use of weapons of mass destruction (WMD). These Guidelines provide an integrated compilation of responder skills, knowledge, and capabilities. These Guidelines help illustrate the areas where common training and understanding—even cross-training among disciplines—can be effectively accomplished.

Emergency Support Function 1—Transportation. Pierce County Department of Emergency Management, Tacoma, WA.
<http://www.co.pierce.wa.us/xml/abtus/ourorg/dem/EMDiv/98CEMP/98ESF1.pdf>. (As of January 2010)

To provide guidance for the coordination of transportation resources and the identification of emergency transportation routes in, around and through the city. This ESF covers transportation routes, methods and resources in the City of Tacoma and its associated sites.

Emergency Support Function Annexes: Introduction. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC.
<http://www.fema.gov/pdf/emergency/nrf/nrf-annexes-all.pdf>. (As of May 2008)

This excerpt from the Emergency Support Function Annexes provides an overview of the Emergency Support Function (ESF) structure, common elements of each of the ESFs, and the basic content contained in each of the ESF Annexes. The following section includes a series of annexes describing the roles and responsibilities of Federal departments and agencies as ESF coordinators, primary agencies, or support agencies.

Emergency Transportation Operations: Freeway Traffic Management Center Capabilities and Needs. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.

http://ops.fhwa.dot.gov/docs/eto_caps_needs/index.htm. (As of January 2009)

The objective of this report is to provide an overview regarding the current capabilities of freeway Traffic Management Centers (TMCs) to perform functions required to support emergency transportation operations. The primary focus of this report is on the needs and activities of freeway transportation personnel to manage and track information central to their operations under a range of emergency conditions. While the central focus of this report is on freeway transportation managers, emergency preparedness and response for the transportation system necessarily involves the activities of others as well, including arterial transportation managers, public transportation managers, public safety personnel (law enforcement, fire and rescue, emergency medical services), highway maintenance personnel, and emergency management personnel. The integration of the activities and capabilities of these organizations into the larger response effort is critical to its ultimate success.

Emergency Transportation Operations: Preparedness [Web site]. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://www.ops.fhwa.dot.gov/opssecurity/preparedness/index.htm>. (As of January 2009)

This Web site offers an extensive array of guidelines and plans to support emergency transportation operations preparedness in a variety of areas such as assessment of planning and preparedness for incidents and disasters; preparedness for bioterror, chemical, and radiological emergencies; and gridlock.

Emergency Transportation Operations: Response [Web site]. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://www.ops.fhwa.dot.gov/opssecurity/response/index.htm>. (As of January 2009)

This Web site offers an extensive array of guidelines and plans to support emergency transportation operations response in a variety of areas such as: evacuation, first responder treatment, Intelligent Transportation Systems (ITS), communications interoperability, and a variety of literature on the role of transportation in response.

Science Applications International Corporation (SAIC). *Emergency Transportation Operations: Capabilities and Needs*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.transportation.org/sites/ntimc/docs/3_ETO-TIM-PSE-Evacuation%20Planning%20Documents.pdf (As of September 2003)

To identify potential improvements in the use and development of computer and communication technology tools for emergency transportation operations, FHWA developed the Assessment and Requirements Analysis for Emergency Transportation Management project. This project investigates information, modeling, and decision support requirements that transportation and emergency managers need to optimize the performance of the transportation system during emergencies. The objective this report is to provide an overview regarding the current capabilities of TMCs to perform functions required to support emergency transportation operations. The primary focus of this report is on the needs and activities of freeway transportation managers to manage and track information central to their operations under a range of emergency conditions.

Hutchinson, K. *Emergency Transportation Practices in North Carolina*. North Carolina Department of Transportation (NCDOT), Raleigh NC. http://san-antonio.tamu.edu/trbanb10-3/Resources/North_Carolina_2003.pdf. (As of April 2003)

This PowerPoint presentation describes the policies, practices, and ITS capabilities current deployed within North Carolina's Department of Transportation. Key findings from evacuation projects and a self-assessment of operations are overviewed.

EMI Courses & Schedules [Web site]. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://training.fema.gov/EMICourses/>. (As of January 2009)

This Web site provides a current list of courses available through the Emergency Management Institute of the Federal Emergency Management Agency.

New York City Emergency Response Task Force. *Enhancing New York City's Emergency Preparedness: A Report to Mayor Michael R. Bloomberg*. Office of the Mayor, New York City Government, New York, NY. http://www.nyc.gov/html/om/pdf/em_task_force_final_10_28_03.pdf. (As of October 2003)

The Task Force examined the impacts of the 2003 Northeast Blackout and resulting issues in six broad areas outlined by Mayor Bloomberg: Emergency Response; Business Continuity; The City as Employer; Communications; Transportation; and Public Health, Safety and Preparedness. The assessment resulted in thirty-five recommendations. Because every emergency event is unique and often requires moment-by-moment decision-making, the Task Force recommendations endorse flexible protocols that encourage cooperation between the public and private sectors and leverage both public and private resources.

EOC Assessment Checklist. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. 2006. <http://www.fema.gov/library/file?type=publishedFile&file=eocchecklist.pdf&fileid=0e4d0340-4eef-11db-bb87-000bdba87d5b>. (As of 2006)

This checklist will assist State and local governments in performing the initial assessment of the hazards, vulnerabilities, and resultant risk to their existing Emergency Operations Center (EOC), as described in the grant guidance for EOC Phase 1 of the FY 2002 supplemental funds. The questions have an operations focus and are intended to address whether a requirement for a particular capability exists, whether the EOC can provide that capability, and whether the provided capability is adequate. The checklist first asks questions about the physical features of a facility housing an EOC/EOC Alternate, and then addresses the characteristics of Survivability, Security, Sustainability, Interoperability, and Flexibility described in the grant guidance. The checklist may be used for State or local EOCs and, where applicable, State or local alternate EOCs. The checklist is a guide and is not intended to be all-inclusive.

Collins, B., and P. Clark. *Evacuating Florida and the 2003 Hurricane Season*. Florida Department of Transportation (FDOT), Tallahassee, FL. http://san-antonio.tamu.edu/trbanb10-3/Resources/Florida_2003.pdf (As of January 2003)

This PowerPoint presentation describes the vulnerabilities regarding the evacuation of Florida. The functionality and benefits of the Traffic Counter Data system is presented in addition to overviews of current ITS applications in use and the HEADS UP—Hurricane Evacuation Analysis & Decision Support Utility Program.

Meehan, B., and M. Foran. *Evacuation Liaison Team (ELT)*, Hurricane Evacuation Workshop, Texas A&M University, San Antonio, TX. http://www.rsip.lsu.edu/anb10-3/Resources/Evacuation_Liaison_Team_2003.pdf. (As of April 2003)

This document describes the function, structure, purpose, and funding of an Evacuation Liaison Team (ELT). An ELT's primary function is to disseminate information. Detailed is the type of information to be communicated. Included is a discussion format section with thought-provoking topics regarding your ELT.

Exercise Plan Workshop Users' Handbook. U.S. Department of Homeland Security (DHS), Office for Domestic Preparedness (ODP), Washington, DC. <http://www.vaemergency.com/programs/trainex/hseep/workshop.cfm>. (As of January 2009)

ODP has developed this Exercise Plan Workshop Users Handbook, which provides the necessary information and documentation to assist states or urban areas in conducting an annual EPW. It has been tailored to include documents appropriate to the needs of the state or jurisdiction conducting an EPW including guidelines, templates, timelines, and definitions.

Clark, P. L., *FDOT and Contra-Flow*. Florida Department of Transportation (FDOT), Tallahassee, FL. http://www.rsip.lsu.edu/anb10-3/Resources/FDOT_and_Contraflow.pdf. (As of January 2003)

This PowerPoint presentation discusses the use of real time traffic counters used for contraflow operations; the route selection process; and, the Department of Transportation's role in the contra-flow decision and implementation.

Federal Continuity Directive 1 (FCD 1): Federal Executive Branch National Continuity Program and Requirements. U.S. Department of Homeland Security (DHS), Washington, DC. www.fema.gov/pdf/about/offices/fcd1.pdf. (As of January 2009)

This Federal Continuity Directive (FCD) provides direction to the Federal executive branch for developing continuity plans and programs. Continuity planning facilitates the performance of executive branch essential functions during all-hazards emergencies or other situations that may disrupt normal operations. The ultimate goal of continuity in the executive branch is the continuation of National Essential Functions (NEFs). The provisions of this FCD supersede:

- a. Federal Preparedness Circular 60, Continuity of the Executive Branch of the Federal Government at the Headquarters Level During National Security

Emergencies, and

- b. Federal Preparedness Circular 65, Federal Executive Branch Continuity of Operations, June 15, 2004.

Federal Continuity Directive 2 (FCD 2): Federal Executive Branch Mission Essential Function and Primary Mission Essential Function Identification and Submission Process. U.S. Department of Homeland Security (DHS), Washington, DC. www.fema.gov/pdf/about/offices/fcd2.pdf. (As of January 2010)

This Federal Continuity Directive (FCD) implements the requirements of Federal Continuity Directive 1, ANNEX C. It provides guidance and direction to federal executive branch departments and agencies for identification of their Mission Essential Functions (MEFs) and potential Primary Mission Essential Functions (PMEFs). It includes guidance and checklists to assist departments and agencies in assessing their essential functions through a risk management process and in identifying potential PMEFS that support the National Essential Functions (NEFs)—the most critical functions necessary to lead and sustain the nation during a catastrophic emergency. The FCD provides direction on the formalized process for submission of a department's or agency's potential PMEFS that are supportive of the NEFs. It also includes guidance on the processes for conducting a Business Process Analysis (BPA) and Business Impact Analysis (BIA) for each of the potential PMEFS that assist in identifying essential function relationships and interdependencies, time sensitivities, threat and vulnerability analyses, and mitigation strategies that impact and support the PMEFS.

Federal Response Plan, Alaskan Supplement to the Federal Response Plan, ESF-1—Transportation. U.S. Department of Transportation, Washington, DC.

The Alaskan Region ESF-1 Regional Supplement establishes an emergency management organization and defines procedures governing emergency transportation management in Alaska provided for under the Federal Response Plan (FRP), and other national and regional emergency plans. The FRP provides for the coordinated management of 12 Emergency Support Functions (ESFs), and designates DOT as the lead agency for ESF-1 (Transportation). Within the DOT Alaskan Region, the Federal Aviation Administration (FAA) is the assigned lead agency and provides the Regional Emergency Transportation Coordinator (RETCO).

Federal Response Plan: Basic Plan. Federal Emergency Management Agency (FEMA), Washington, DC. <http://www.au.af.mil/au/awc/awcgate/frp/frpbasic.pdf>. (As of January 2003)

The Federal Response Plan (FRP) outlines how the Federal Government implements the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, to assist state and local governments when a major disaster or emergency overwhelms their ability to respond. The FRP describes the policies, planning assumptions, concept of operations, response and recovery actions, and responsibilities of 25 Federal departments and agencies and the American Red Cross, that guide Federal operations following a Presidential declaration of a major disaster or emergency. This interim edition of the FRP reflects the passage of the

Homeland Security Act of 2002 and the establishment of the Department of Homeland Security (DHS).

Final Report for the Application of Technology to Transportation Operations in Biohazard Situations. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.

http://www.its.dot.gov/eto/docs/transops_biohazard/executive.htm. (As of January 2009)

The goal of this project, Application of Technology to Transportation Operations in Biohazard Situations, was to develop a more comprehensive and actionable understanding of the role of transportation agencies during a biohazard situation. The documents and tools produced during this project are intended to help state and local transportation agencies perform the roles expected of them during all phases of a biohazard incident. Those roles can differ significantly from the ones they typically perform during other types of emergencies.

Fire and Emergency Services Preparedness Guide for the Homeland Security Advisory System. Federal Emergency Management Agency (FEMA), Washington, DC.

<http://www.usfa.fema.gov/downloads/pdf/hsas-guide.pdf>. (As of January 2004)

Within this guide, emergency response leadership will find recommended preparedness measures for each HSAS Threat Condition. The contents of this document should assist the heads of fire and EMS agencies with the development and implementation of appropriate agency-specific preparedness measures.

Spangle Associates and the Mitigation Assistance Corporation. *Flood Mitigation and Recovery—An Interactive Exercise for Local Governments*. Federal Emergency Management Agency (FEMA), Washington, DC.

<http://www.training.fema.gov/EMIWeb/downloads/flood.pdf>. (As of August 1995)

This manual describes a training exercise on post-flood mitigation and recovery. The exercise simulates selected aspects of physical recovery from flood damage. The stage is a single local government jurisdiction and the players are its key staff members. Players are guided in creating their own scenario of flood damage and then led through a series of tasks related to planning for repairs and rebuilding.

Full Road Closure for Work Zone Operations: A Cross-Cutting Study. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.

<http://www.ops.fhwa.dot.gov/wz/resources/publications/FullClosure/CrossCutting/its.htm>. (As of January 2009)

This study investigates the applicability of full road closures to state maintenance and construction projects. Research reveals that state highway agencies have used full road closure successfully on a variety of project types ranging from full-depth reconstruction to bridge joint replacement with guard rail enhancements. Project personnel interviewed felt that full road closure was able to improve the road rehabilitation process, creating efficiencies that reduced project duration and in some cases overall costs, while improving safety. A consistent theme, heard during interviews with project personnel, was the positive public sentiment that resulted from

the use of full road closure.

Fusion Center Guidelines: Developing and Sharing Information and Intelligence in a New Era. U.S. Department of Justice (DOJ), Washington, DC.
http://it.ojp.gov/documents/fusion_center_guidelines.pdf(As of January 2006)

The U.S. Department of Justice (DOJ) and the U.S. Department of Homeland Security (DHS) collaborated in the development of these fusion center guidelines. The intent of the partnership is to provide a consistent, unified message and to provide a comprehensive set of guidelines for developing and operating a fusion center within a state or region. The need to develop and share information and intelligence across all levels of government has significantly changed over the last few years. The development of guidelines for fusion centers was separated into three phases—law enforcement, public safety, and the private sector. These guidelines may be used for homeland security efforts, as well as all crimes.

FY 2006 Homeland Security Grant Program—Program Guidance and Application Kit. U.S. Department of Homeland Security (DHS), Washington, DC.
www.fema.gov/pdf/government/grant/2010/fy10_hsgp_kit.pdf. (As of December 20January 2010)

This combined FY 2010 HSGP Program Guidance and Application Kit builds upon the FY 2005 HSGP to streamline efforts for states and urban areas in obtaining resources that are critical to building and sustaining capabilities to achieve the Interim National Preparedness Goal (the Goal) and implement State and Urban Area Homeland Security Strategies.

G197—Emergency Planning & Special Needs Population Course. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Emergency Management Institute (EMI), Washington, DC.
<http://training.fema.gov/EMWeb/STCourses/crsdesc.asp?courseid=G197>. (As of January 2009)

This 2½-day course offered by the Emergency Management Institute is intended to provide those with responsibilities for providing emergency planning or care of seniors, people with disabilities, and/or special needs groups with the skills and knowledge they will need to prepare for, respond to, and recover from emergency situations.

Governor's Disaster Planning and Response Review Committee Recommendations Report. Florida Division of Emergency Management, Tallahassee, FL.

This report contains the recommendations of the Governor's Disaster Planning and Response Review Committee for improving Florida's preparedness for and capability to recover from future disasters. The Committee examined preparedness before Hurricane Andrew and response and recovery efforts during the first two weeks after landfall. The 94 recommendations identify actions that should be taken by all levels of government, volunteer organizations, the media and selected professional organizations. Each recommendation is supported by comments and fiscal notes.

Transportation Emergency Preparedness Program (TEPP). *Guidance for Planning, Conducting and Evaluating Transportation Emergency Preparedness Tabletops, Drills and Exercises*. Department of Energy, Office of Transportation and Emergency Management, Washington, DC. <http://www.em.doe.gov/PDFs/TEPP/4-a-1%20Guidance%20for%20Planning%20Exercises.pdf>. (As of January 2010)

This guidebook and accompanying support materials were developed to assist local, state, tribal, and federal agencies in conducting emergency preparedness tabletops, drills, and exercises for transportation emergencies involving the transport of radioactive material. It provides basic instructions on all aspects of event preparation, and describes how to use the other materials in this transportation emergency preparedness package. Used properly, this manual should enhance emergency preparedness by enabling communities to practice and demonstrate their ability to respond to a transportation emergency as well as help encourage and strengthen a positive working relationship between the various agencies in communities and states who would respond to a radiological transportation emergency.

Law Enforcement and Corrections Standards and Testing Program. *Guide for the Selection of Communication Equipment for Emergency First Responders: NIJ Guide 104-00 Volume 1*. U.S. Department of Justice (USDOJ), Office of Justice Programs, National Institute of Justice (NIJ), Washington, DC. <http://www.ncjrs.org/pdffiles1/nij/191160.pdf>. (As of February 2002)

This guide focuses on communication equipment and was developed to assist the emergency first responder community in the evaluation and purchase of communication equipment that can be used in conjunction with chemical and biological protective clothing and respiratory equipment. This guide does not make recommendations about which equipment should be purchased, but rather organizes available information so commercially available equipment can be compared and contrasted, based on the needs of individual agency investing their applicability.

Law Enforcement and Corrections Standards and Testing Program. *Guide for the Selection of Communication Equipment for Emergency First Responders: NIJ Guide 104-00 Volume 2*. U.S. Department of Justice (USDOJ), Office of Justice Programs, National Institute of Justice (NIJ), Washington, DC. <http://www.ncjrs.org/pdffiles1/nij/191161.pdf>. (As of February 2002)

This guide focuses on communication equipment and was developed to assist the emergency first responder community in the evaluation and purchase of communication equipment that can be used in conjunction with chemical and biological protective clothing and respiratory equipment. This guide does not make recommendations about which equipment should be purchased, but rather organizes available information so commercially available equipment can be compared and contrasted, based on the needs of individual agency investing their applicability. This document is available on the AGILE Web site.

Davidson, J., and C. Alex. *Guide on Improving Public Understanding of and Response to Warnings*. World Meteorological Organization, Geneva, Switzerland.

<http://www.wmo.int/pages/prog/amp/pwsp/doc/ETWFEUHongKong.report.doc>. (As of March 2002)

This guide is intended to provide a useful reference for National Meteorological Societies (NMSs) in their common goal to improve the public understanding of and response to warnings. In the guide, it is emphasized that response to warnings is most effective when the public receives an accurate, timely and understandable message from multiple credible sources, using all available communication channels. In the same vein, public awareness programs need to be conducted using a variety of approaches in consideration of the target audience.

Pat Noyes & Associates. *Guidelines for Developing Traffic Incident Management Plans for Work Zones*. Colorado Department of Transportation (CDOT), Safety and Engineering Branch, http://www.trafficincident.org/papers/2003/incident_management_guidelines_20030919.pdf. (As of September 2003)

This publication outlines the Colorado Department of Transportation's (CDOT's) initiative to provide guidelines for traffic incident management in work zones. It builds on successful practices already in place in Colorado and other states. Although a number of other states have adopted guidelines and requirements to address incident management in work zones, CDOT's effort goes beyond these current practices.

Hams a Bright Spot During Power Blackout. The National Association for Amateur Radio, Newington, CT. <http://www.arrl.org/w1aw-bulletins-archive/ARLB054/2003>. (As of January 2010)

When a blip on the electricity distribution grid August 14 took out power to at least a half dozen states in the eastern U.S., many Amateur Radio operators were ready and able to provide whatever assistance they could. Hardest hit were metropolitan areas like New York City, Detroit, and Cleveland. In New York, residents and commuters found themselves stranded in electricity-dependent elevators and subway or rail cars while visitors ended up stuck at airports, which were forced to shut down. With the cellular telephone system overloaded or out altogether, the incident turned into a test of Amateur Radio's capabilities to operate without commercial power.

Harris County, Texas Citizen Corps' Response to Hurricane Katrina. Lessons Learned from Information Sharing. U.S. Department of Homeland Security (DHS), Washington, DC. http://www.fema.gov/pdf/emergency/nims/lessons_learned_tx_katrina.pdf. (As of January 2006)

In the wake of Hurricane Katrina, the Harris County, Texas, Citizen Corps coordinated a massive volunteer effort to provide evacuees with temporary housing at makeshift shelters throughout the Houston metropolitan area. The volunteers sheltered roughly 15,000 Louisiana residents in Houston's Reliant Astrodome, while thousands more were housed in the nearby Reliant Arena, Reliant Center, and George R. Brown Convention Center Agency for Toxic Substances and Disease Registry.

Helping Families Deal with the Stress of Relocation After a Disaster. Department of Health and Human Services (DHHS), Washington, DC.
<http://www.atsdr.cdc.gov/publications/100233-RelocationStress.pdf>. (As of November 2005)

This document provides information on the signs of stress in different age groups and how to help individuals cope in extreme stress situations.

PB Farradyne. *Highway Traffic Operations and Freeway Management State-of-the-Practice Final Report.* U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.
http://ntl.bts.gov/lib/22000/22600/22634/Freeway_Management_SOP_V.7.2.1.pdf. (As of March 2003)

This document provides guidance on how to manage and operate the freeway transportation system assets to get the most out of them. It defines the state-of-the-art and summarizes the state-of-the-practice in freeway management and operations in order to provide a basis for recommending actions that will address gaps between the state-of-the-practice and state-of-the-art. It also provides recommended research, educational, and outreach actions. This white paper is interrelated to, and can be considered a companion document with, the Freeway Management and Operations Handbook (FMOH).

Homeland Security Exercise and Evaluation Program—Volume I: Overview and Exercise Program Management. U.S. Department of Homeland Security (DHS), Office for Domestic Preparedness (ODP), Washington, DC.
<https://hseep.dhs.gov/support/Volumel.pdf>. (As of February 2007)

Homeland Security Exercise and Evaluation Program (HSEEP) Volume I was initially published in 2002 and provided an overview of the exercise design, development, conduct, evaluation, and improvement planning process as well as doctrine for U.S. Department of Homeland Security (DHS) exercises. Subsequent volumes (II–IV) provided more detailed descriptions of the planning and evaluation process as well as sample exercise materials.

Since the initial versions of the HSEEP volumes were published, the homeland security community has experienced numerous changes, including the building of a new and cohesive federal agency and the release and adoption of the National Response Plan (replaced in 2008 by the National Response Framework), National Incident Management System (NIMS), National Preparedness Goal, Universal Task List (UTL), and Target Capabilities List (TCL). This 2007 release of the HSEEP volumes represents an exercise policy and program reflective of these changes. HSEEP Volume I: *HSEEP Overview and Exercise Program Management*, provides guidance for building and maintaining an effective exercise program and summarizes the planning and evaluation process described in further detail in Volumes II–V.

Homeland Security Exercise and Evaluation Program—Volume II: Exercise Planning and Conduct. U.S. Department of Homeland Security (DHS), Office for Domestic Preparedness (ODP), Washington, DC. <https://hseep.dhs.gov/support/VolumeII.pdf>. (As of February 2007)

HSEEP Volume II: *Exercise Planning and Conduct* helps planners outline a standardized foundation, design, development, and conduct process adaptable to any type of exercise.

Homeland Security Exercise and Evaluation Program—Volume III: Exercise Evaluation and Improvement Planning. U.S. Department of Homeland Security (DHS), Office for Domestic Preparedness (ODP), Washington, DC.
<https://hseep.dhs.gov/support/Volumelll.pdf>. (As of February 2007)

HSEEP Volume III: *Exercise Evaluation and Improvement Planning* offers proven methodology for evaluating and documenting exercises and implementing an Improvement Plan (IP).

Homeland Security Exercise and Evaluation Program—Volume IV: Sample Materials. U.S. Department of Homeland Security (DHS), Office for Domestic Preparedness (ODP), Washington, DC.
https://hseep.dhs.gov/hseep_vols/default1.aspx?url=home.aspx. (As of January 2009)

HSEEP Volume IV: *Sample Exercise Documents and Formats* provides sample exercise materials referenced in HSEEP Volumes I, II, III, and V. Readers with Internet connectivity may click on exercise materials referenced in this volume to link to HSEEP Volume IV.

Homeland Security Exercise and Evaluation Program—Volume V: Prevention Exercises. U.S. Department of Homeland Security (DHS), Office for Domestic Preparedness (ODP), Washington, DC.
[http://dhs.alabama.gov/pdf/HSEEP_Policy_and_Guidance/HSEEP%20Vol%20V_Prev%20Exer%20DRAFT%20\(2006\).pdf](http://dhs.alabama.gov/pdf/HSEEP_Policy_and_Guidance/HSEEP%20Vol%20V_Prev%20Exer%20DRAFT%20(2006).pdf). (As of December 2005)

HSEEP Volume V: *Prevention Exercises (Draft)* contains guidance consistent with the HSEEP model to assist entities in designing and evaluating exercises that validate pre-incident capabilities such as intelligence analysis and information sharing.

Homeland Security Presidential Directive/HSPD-5: Management of Domestic Incidents. The Executive Office of the President, Washington, DC.
http://www.dhs.gov/xabout/laws/gc_1214592333605.shtm. (As of January 2009)

This Presidential Directive was issued to enhance the ability of the United States to manage domestic incidents by establishing a single, comprehensive national incident management system. The Directive establishes policy to prevent, prepare for, respond to, and recover from terrorist attacks, major disasters, and other emergencies. The role of the Secretary of Homeland Security in ensuring domestic incident management is established within, including the coordination with state and local authorities and the obligation of Federal assistance. The Homeland Security-related roles of other Federal leadership such as the Attorney General and Secretary of State are also outlined in the Directive.

Homeland Security Presidential Directive/HSPD-6: Integration and Use of Screening Information. The Executive Office of the President, Washington, DC.
http://www.dhs.gov/xabout/laws/gc_1214594853475.shtm. (As of January 2009)

Presidential Directive HSPD-6 outlines Federal policy regarding the integration and use of screening information as it applies to homeland security. The Directive requires the establishment of an organization by the Attorney General to consolidate the government's approach to terrorism screening and provide for the appropriate and lawful use of terrorist information in screening processes. The organization will have access to all information housed in the Terrorist Threat Integration Center (TTIC). The Directive also mandates the Secretary of Homeland Security to develop guidelines to govern the use of such information to support state, local, and private sector screening processes that have a substantial bearing on homeland security.

Homeland Security Presidential Directive/HSPD-7: Critical Infrastructure Identification, Prioritization, and Protection. The Executive Office of the President, Washington, DC.
http://www.dhs.gov/xabout/laws/gc_1214597989952.shtm. (As of January 2009)

HSPD-7 establishes a national policy for Federal departments and agencies to identify and prioritize United States critical infrastructure and key resources and to protect them from terrorist attacks. Federal departments and agencies are instructed to work with state and local governments and the private sector to conduct this identification and prioritization. The Directive outlines the specific roles of Sector-Specific Federal Agencies and requires the Secretary of Homeland Security to develop a geospatial system for the analysis of identified critical infrastructure and key resources.

Homeland Security Presidential Directive/HSPD-8: National Preparedness. The Executive Office of the President, Washington, DC.
http://www.dhs.gov/xabout/laws/gc_1215444247124.shtm. (As of January 2009)

HSPD-8 establishes policies that strengthen the preparedness of the United States to prevent and respond to threatened or actual domestic terrorist attacks, major disasters, and other emergencies. The Directive requires a national domestic all-hazards preparedness goal, establishing mechanisms for improved delivery of Federal preparedness assistance to state and local governments, and outlining actions to strengthen preparedness capabilities of Federal, state, and local entities, such as the development of equipment standards and training guidance.

Homeland Security Presidential Directive/HSPD-9: Defense of United States Agriculture and Food. The Executive Office of the President, Washington, DC.
http://www.dhs.gov/xabout/laws/gc_1217449547663.shtm. (As of January 2009)

The United States agriculture and food systems are vulnerable to disease, pest, or poisonous agents that occur naturally, are unintentionally introduced, or are intentionally delivered by acts of terrorism. America's agriculture and food system is an extensive, open, interconnected, diverse, and complex structure providing potential targets for terrorist attacks. We should provide the best protection possible against a successful attack on the United States agriculture and food system, which

could have catastrophic health and economic effects.

How to Plan for Workplace Emergencies and Evacuations. U.S. Department of Labor (DOL), Occupational Safety and Health Administration (OSHA), Washington DC. <http://www.osha.gov/Publications/osha3088.pdf> (As of January 2001)

How to Plan for Workplace Emergencies and Evacuations is designed to help employers plan for the possibility of events that require the evacuation of employees. The document offers guidance on the development, preparation for implementation, and implementation of workplace evacuation plans. Information on defining procedures, exit routes, coordinator roles, and business recovery plans are outlined in this resource, as well as substantial information on equipment used in evacuations and the existing OSHA requirements that apply to these materials and the emergency evacuation planning process.

Hurricane Evacuation and Mass Care Plan. State of Texas, Austin, TX. ftp://ftp.txdps.state.tx.us/dem/plan_state/hurr_evac_shelter_state_plan.pdf. (As of June 2007)

The purpose of this plan is to define the organization, operational concepts, responsibilities, and procedures to adequately prepare for and respond to a catastrophic hurricane evacuation of the Texas Gulf Coast and subsequent inland mass care operations. The plan outlines state, regional, and local government responsibilities for the managed movement of people and resources from an area of increased danger to an area of relative safety. This plan is applicable to all locations and to all agencies, organizations, and personnel with Evacuation and Mass Care Emergency Support Function (ESF) responsibilities.

Kung, L. H. *Hurricane Evacuation Routes—Miami-Dade County*. Dade County Emergency Management, Miami, FL. www.sfrpc.org/data/rhem/Map02.pdf. (As of October 2006)

This document displays a map of the evacuation routes for Miami-Dade County, Florida.

Hurricane Evacuation Routes—Brazoria/Galveston/Harris County Hurricane Evacuation Map. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. http://www.texmedctr.tmc.edu/NR/rdonlyres/0A556F3E-356D-4EB3-8AC4-70F2B1965836/0/Hurricane_Evac_Zones_Zipcode2.pdf. (As of October 2005)

This document displays a map of the evacuation routes for Brazoria, Galveston and Harris County, Texas.

Batchelor, J., K. Hutchinson, T. Wyatt, and J. Goins. *Hurricane Floyd: Lessons Learned*. North Carolina Department of Transportation (NCDOT), Raleigh, NC. <http://www.doh.dot.state.nc.us/operations/FloydLessons/PDF/HurricaneFloydLL.pdf>. (As of April 2000)

NCDOT's response and recovery efforts were coordinated and effective, yet opportunities exist to improve readiness. This report was commissioned to evaluate NCDOT's response to Hurricane Floyd, identify strengths and weaknesses, and develop recommendations. Interviews were conducted with employees throughout the department. Those interviewed included the field staff who performed response and recovery activities and central office personnel who focused on public information, coordination, policies, and procedures. A full list of interviewees can be found in Appendix A of this report.

Hurricane Katrina in Louisiana, DR-1603-LA, DHS/FEMA Initial Response, Hotwash. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC.
www.bt.cdc.gov/disasters/hurricanes/katrina/pdf/katrina-aar.pdf. (As of February 2006)

On August 27th, 2005, California Task Force 3 (CA-TF3) received activation orders from the Federal Emergency Management Agency (FEMA) for the pre-staging of the Blue Incident Support Team (IST) members in advance of the landfall of Hurricane Katrina. They operated out of Baton Rouge, Louisiana. This After-Action report details this deployment.

Center for Risk Management of Engineering Systems and Virginia Transportation Research Council. *Hurricane Preparedness and Recovery by a Transportation Agency.* Virginia Department of Transportation (VDOT), Charlottesville, VA.
<http://www.virginia.edu/crmes/2001hurricane/pdf/Title.pdf>. (As of May 2001)

The goal of the effort has been to improve hurricane preparedness and recovery of the Virginia Department of Transportation through the identification of planning and management options and the assessment and evaluation of the associated costs, benefits, and risks. There are seven related objectives: (1) A review of the literature and other agencies' experience; (2) Development of a software-based platform for recovery priorities; (3) Identification of additional roads and critical facilities to be used in priority setting; (4) Decision support for resource allocation for hurricane recovery; (5) Time-to-recovery analysis; and (6) Analysis of schedule dependencies among agencies; and (7) Trade-off analysis performed on recovery/preparedness alternatives.

Wallace, C. E., and J. O'Laughlin. *I-95 Corridor Coalition Coordinated Incident Management, Toolkit for Quick Clearance.* I-95 Corridor Coalition. College Park, MD.
<http://www.i95coalition.net/i95/Training/QuickClearanceWorkshop/tabid/188/Default.aspx>
(As of February 2010)

This publication contained a practical depiction of Traffic Incident Management (TIM) and Quick Clearance (QC) laws, policies, guidelines, training courses, and accepted practices. It also contains TIM/QC checklists for 12 stakeholder groups and a series of 10 TIM/QC fact sheets. An accompanying DVD includes numerous samples of all of these.

Dotson, L.J., and J. Jones. *Identification and Analysis of Factors Affecting Emergency*

Evacuations—Main Report. Sandia National Laboratories; U.S. Nuclear Regulatory Commission, Washington DC. <http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6864/v1/cr6864v1.pdf>. (As of January 2005)

This study examines the efficiency and effectiveness of public evacuations of 1,000 or more people, in response to natural disasters, technological hazards, and malevolent acts, occurring in the United States between January 1, 1990, and June 30, 2003. A universe of 230 evacuation incidents was identified and a subset of 50 incidents was selected for case study analysis.

Dotson, L.J. and J. Jones. *Identification and Analysis of Factors Affecting Emergency Evacuations—Appendices.* Sandia National Laboratories; U.S. Nuclear Regulatory Commission, Washington DC. <http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6864/v2/cr6864v2.pdf>. (As of January 2005)

Volume II contains the data and information that support Volume I. Appendix A contains a detailed listing of the 230 evacuations that comprise the universe of evacuations. Appendix B contains the evacuation form used to collect data for each of the 50 cases studied. Appendix C contains the results of the frequency analysis. The remaining appendices contain the SAS 8.02 output for the regression analyses (Appendices F through K) and the correlation analyses (Appendix L).

If Disaster Strikes Today Are You Ready to Lead? A Governor's Primer on All-Hazards Emergency Management. National Emergency Management Association (NEMA), Lexington, KY. http://www.nemaweb.org/docs/Gov_Primer.pdf. (As of January 2003)

This primer on all-hazards emergency management is intended to highlight for new governors, and their staff, the importance of maintaining a viable emergency management program. It will also provide an overview of the roles and responsibilities of the state emergency management agency and the resources and capabilities that exist to maintain a coordinated, statewide, emergency preparedness, response and recovery system.

Mauskapf, B. *Implementing a Common Incident Management System for Virginia.* Virginia Department of Health. NIMS Planning Workshop for State Agencies, Chesterfield, VA.

This PowerPoint presentation delivered by Bob Mauskapf of the Virginia Department of Health at the NIMS Planning Workshop for State Agencies discusses the state; guiding principals, components, and implementation of the National Incident Management System.

Task Force on Homeland Security and Emergency Preparedness of the National Capital Region. *Improving Emergency Response in the National Capital Region.* Metropolitan Washington Council of Governments, Washington, DC. <http://www.mwcog.org/security/security/download/COG%20ES%20Recommendations%20CAO%20consensus.ppt>. (As of December 2001)

This PowerPoint presentation offers recommendations for improving emergency response regarding transportation and, disaster and emergency preparedness

including considerations of Solid Waste management and communication via a Regional Incident Communication Center (RICC.) It defines the roles of the following specialized committees: Police Chiefs, Fire Chiefs, Health Officer, Water Supply, and Energy.

Kentucky Transportation Center. *Improving Incident Management Response and Coordination of Resources*. University of Kentucky, Lexington, KY.
http://www.ktc.uky.edu/Reports/KTC_01_27_SPR199_98_1F.pdf. (As of December 2001)

Traveler delay is the problem most often associated with highway crashes, but by far the most serious problem is the resulting secondary crashes that occur. Another issue is the danger posed to response personnel serving the public at the scene. A coordinated plan for managing the scene is needed to reduce the impact of highway crashes and improve the safety for everyone. A checklist and interagency workshop has been developed to address ways to secure and coordinate the resources necessary to restore the roadway's operation in a safe and timely manner. This Checklist and workshop serve as a reminder to responding agencies of the activities that need to be performed and who needs to perform them.

Improving NYPD Emergency Preparedness and Response. McKinsey & Company, New York, NY.

This report documents the results of a study conducted by McKinsey & Company to identify opportunities for enhancing the emergency preparedness of the New York Police Department (NYPD) based on its response to the September 11 attacks. Recommendations are delivered to the NYPD in key areas such as operational command, communications, personnel, logistics/equipment, intelligence, training, and planning.

Pearce, V. *Improving Surface Transportation Operations in Emergency Situations*. Intelligent Transportation Society of America (ITS America), ITS Japan and ERTICO - ITS Europe, 9th Intelligent Transportation Systems (ITS) Word Congress, Chicago, IL.
http://security.transportation.org/sites/security/docs/Improving_Surface_Trans_Ops_Emergency.pdf. (As of January 2002)

In the months following the terrorist acts of Sept. 11, 2001, intense effort has been focused on understanding the state of security of travel on the nation's roadways, and on improving the existing level of security. These efforts have taken place within and across modes and between agencies that had not previously had reasons to work together. The activity has encompassed agencies at federal, state, and local levels, as well as the private sector, academia, and many associations supporting these participants. Progress has been significant but not particularly visible. This paper describes some of the effort, the findings, and the results.

Honig, K. *Incident Command System: Command Post and Emergency Operations Centers*. American Association of Port Authorities (AAPA), Alexandria, VA.

This document provides a review of the Incident Command System and a comparison

of Incident Command Posts and Emergency Operation Centers, their individual functions and provides guidelines for the establishment of an ICP and EOC.

Incident Management Successful Practices: A Cross-Cutting Study. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://www.iacptechnology.org/IncidentManagement/IncidentMgmtPractices.pdf>. (As of April 2000)

This overview of successful practices in traffic incident management describes who the partners are in traffic incident management and lists some benefits obtained in various traffic incident management programs. It also lists issues and lessons learned for incident detection and verification, response, site management, clearance, interagency coordination, training and leadership, and strategic program planning for traffic incident management.

Incident Management Task Force: White Paper. Connecticut Transportation Strategy Board (TSB), Incident Management Task Force, New Haven, CT. http://www.ct.gov/opm/lib/opm/tsb/reports_tsb/incident_management_task_force_final_report_2003.pdf. (As of October 2003)

In January 2003, the Transportation Strategy Board (TSB) created an Incident Management Task Force to develop policies and implementation plans related to incident management. They addressed four incident management topics: standards for highway incident response times; diversion plans for serious accidents that close limited access highways; primary authority among responders to manage a highway incident scene; and, expanding the Connecticut Highway Assistance Motorist Patrol (CHAMP) service. A fifth category was added for addressing six towing and recovery topics. The product of these subcommittees' research, meetings and collaboration is a White Paper which describes current practices, in some cases best practices, and recommendations for each of the above listed topics.

Indoor and Outdoor Decontamination Research [Web site]. U.S. Environmental Protection Agency (EPA), Washington, DC. <http://www.epa.gov/NHSRC/decon.html>. (As of January 2009)

The Environmental Protection Agency's Indoor and Outdoor Decontamination Research Web site provides a variety of resources (click on Products) related to decontamination, containment and mitigation, and remediation.

The main focus of indoor and outdoor decontamination research is on improving the nation's ability to respond to terrorist attacks affecting indoor and outdoor environments. The thematic research areas include:

- Detection research, which results in detection techniques (e.g., laboratory methods, technology evaluations) that will enable the rapid characterization of threats and identification contaminants.
- Containment and mitigation research, which results in reports, databases, and computer models that provide information on the movement and health effects of contaminants.
- Remediation research, which delivers reports, techniques, and tools to support

the remediation (decontamination and associated material disposal) of buildings and outdoor environments following an incident of national significance.

Dopart, K. *Integrated Public Safety and Highway Operations: A Policy Framework and Analysis*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), National Dialogue on Transportation Operations, Washington, DC. http://findarticles.com/p/articles/mi_qa3734/is_200301/ai_n9200422. (As of January 2003)

Transportation operations and public safety are inextricably linked, yet there is limited coordination between agencies that oversee operations and safety. Policy strategies for engaging the public safety community in transportation operations require federal transportation leadership in three areas: (1) Establishing accountability for highway operations performance within the public safety community; (2) developing tools to help public safety agencies in functions related to highway operations; and (3) funding programs to encourage and enable public safety support of highway operations objectives.

Bunn, M. D., and G. T. Savage. *Integrated Traffic Management and Emergency Response: Success Factors*. University Transportation Center, The University of Alabama, Birmingham, AL. http://utca.eng.ua.edu/projects/final_reports/Bunn-01101-fnl.htm. (As of January 2009)

This project developed and conducted a quantitative survey of stakeholder relations in the deployment of integrated traffic management and emergency response systems. The purpose was twofold: 1) to develop generalized metrics of stakeholder perceptions and relationships and 2) to calibrate important success factors of integrated programs. The goals include determining what works and what does not work—and the circumstances that affect success or failure.

Cluett, C., F. Kitchener, D. Shank, and L. Osborne. *Integration of Emergency and Weather Elements into Transportation Management Centers*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://ops.fhwa.dot.gov/weather/resources/publications/tcmintegration/finalrpttmc22806.pdf>. (As of February 2006)

This study is part of an ongoing FHWA research effort that seeks to document transportation operations across the country and identify strategies that can enhance the operational effectiveness of transportation management systems in general and TMCs in particular. The TMC Integration study documents how weather and emergency information and systems are being integrated into transportation operations now and the potential for applying practical, effective concepts and methods of integration in the future. The study investigated the needs and opportunities for TMC integration of emergency and weather information and systems, and further explored the concepts, methods and potential for integration to benefit operations. Thirty-eight TMCs across the country that demonstrated current best practices in integration were interviewed and ten of those selected for site visits. A concept of integration and measures of integration attainment were developed and described.

IS139 Exercise Design Course—Self-Study. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://training.fema.gov/EMWeb/IS/is139.asp>. (As of January 2009)

This course is designed to introduce the fundamentals of exercise design and to prepare for, design, and conduct a small functional exercise for an organization. It addresses the value of conducting exercises; and the components of a comprehensive exercise program; the exercise development process development tasks, organization of the design.

IS139 Exercise Design [Web site]. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://training.fema.gov/EMWeb/IS/is139lst.asp>. (As of January 2009)

This Web site provides links to the components of the IS139 Exercise Design training materials, including the Control Plan Template, Exercise Evaluation Plan Template, Exercise Player Handbook (Template), and other related resources.

ITS Joint Program Office Home: Spotlight [Web site]. U.S. Department of Transportation (U.S.DOT), Research and Innovative Technology Administration (RITA), Washington, DC. <http://www.its.dot.gov/index.htm>. (As of January 2009)

The ITS Joint Program Office (JPO) is comprised of program managers and coordinators of the U.S.DOT's multimodal ITS initiatives. The ITS Joint Program Office section of the RITA Web site provides a variety of information and documentation to support its initiatives.

Joint Operations Policy Statement. Washington State Patrol and Washington State Department of Transportation, Olympia, WA. <http://www.watimcoalition.org/pdf/JOPS.pdf>. (As of February 2008)

The purpose of this policy statement is to document the joint policy positions between the Washington State Patrol (WSP) and the Washington State Department of Transportation (WSDOT) regarding issues of mutual interest in the operations of Washington State highways. Policies, roles, and actions are defined in the following areas: data sharing, traffic management, work zone safety, commercial vehicles, joint facilities, wireless communication, Washington State ferries, transportation system security, and safety rest areas. Specific policies in the traffic management area are stated on coordinated public communication, service patrols, enforcement processes, incident response, disaster response, and winter driving.

King County Emergency Management Plan, Emergency Support Function (ESF) 1, Transportation. King County Office of Emergency Management, Renton, WA. <http://www.ci.kent.wa.us/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=9310>. (As of January 2010)

The purpose of Emergency Support Function (ESF) 1 is to define King County's roles and responsibilities for the coordination and delivery of transportation support

and assistance following an emergency or disaster. Transportation support involves the provision of King County transit, road and bridge maintenance, equipment and vehicle maintenance, airport operations, and King County Sheriff's Office helicopter and marine unit resources.

King County Regional Disaster Plan for Public and Private Organizations in King County Washington, Emergency Support Function # 1—Transportation Annex. King County Office of Emergency Management, Renton, WA.

http://www.co.king.wa.us/safety/prepare/EmergencyManagementProfessionals/PlansandPrograms/~media/safety/prepare/documents/RDP/RDP_ESF1_2_8_07.ashx. (As of January 2002)

The purpose of this Emergency Support Function (ESF) is to provide organization, mobilization and coordination of transportation services and resources during and following an emergency or disaster in the King County region. The provision of transportation support involves roads, bridges, transit, rail, ferry system, waterways, airports and seaports.

Litman, T. *Lessons From Katrina and Rita—What Major Disasters Can Teach Transportation Planners.* Victoria Transport Policy Institute, Victoria, BC, Canada. <http://www.vtpi.org/katrina.pdf>. (As of April 2006)

This paper examines failures in hurricane Katrina and Rita emergency response and their lessons for transportation planning in other communities. Katrina's evacuation plan functioned relatively well for motorists but failed to serve people who depend on public transit. Rita's evacuation plan failed because of excessive reliance on automobiles, resulting in traffic congestion, and fuel shortages. Equitable and compassionate emergency response requires special efforts to address the needs of vulnerable residents. Improved emergency response planning can result in more efficient use of available resources. This paper identifies various policy and planning strategies that can help create a more efficient, equitable and resilient transport system.

Lessons Learned: 7 Years after the Oklahoma City Bombing, Appendix C. Oklahoma City National Memorial Institute for the Prevention of Terrorism (MIPT), Oklahoma City, OK. <http://www.terrorisminfo.mipt.org/pdf/MIPT-OKC7-AppC-only.pdf>. (As of January 2002)

This document includes the final appendix for the *Lessons Learned: 7 Years after the Oklahoma City Bombing* report.

Lessons Learned From September 11: The New York Fire Department. McKinsey & Company, New York, NY. http://nyc.gov/html/fdny/html/mck_report/toc.shtml. (As of January 2009)

This report documents the results of a 5-month study conducted by McKinsey & Company to develop recommendations for enhancing the emergency preparedness of the New York Fire Department (FDNY) based on their response to the September 11 attacks. Recommendations are delivered to the Fire Department in five key areas:

operations, planning and management, communications and technology, family and member support services, and interagency coordination.

Local Emergency Preparedness Planners Guide for the Care and Sheltering of the Medically Fragile. The Shelter Medical Group, Sacramento, CA.
www.emsa.ca.gov/disaster/files/TOOLKIT.doc. (As of January 2010)

This document provides guidelines for the local and regional implementation of sheltering and austere medical care delivery systems specifically for the medically fragile prior to and during a disaster.

State of Louisiana Emergency Operations Plan. Governor's Office of Homeland Security & Emergency Preparedness, Baton Rouge, LA.
<http://www.loep.state.la.us/plans/EOP.pdf>. (As of July 2007)

This document supplements and is a supporting document for the Louisiana Emergency Operations Plan (EOP), a comprehensive plan for the organization and functioning of state government in emergencies and disasters. The EOP is general in nature, organized into Emergency Support Functions (ESF) Annexes. Annexes have Appendices that break down functions into more detailed separate areas of action and responsibility. The purpose of this supplement is to organize the supporting details that take the planning another step further.

London Emergency Services Liaison Panel. *Major Incident Procedure Manual, Seventh Edition.* London Emergency Services Liaison Panel, London, England.
http://www.leslp.gov.uk/docs/Major_incident_procedure_manual_7th_ed.pdf. (As of 2007)

The procedures adopted by each of the emergency services in response to a major incident are understandably devoted to the role of the service concerned. The purpose of this document is to describe the agreed procedures and arrangements for the effective coordination of their joint efforts. In this way the overall response of the emergency services will be greater than the sum of their individual efforts, to the benefit of the public. This manual provides summaries of the responses and responsibilities of each of the emergency services at a major incident, as well as an outline of the support role offered by local authorities.

Major Management Challenges and Program Risks. U.S. General Accounting Office (GAO) GAO-03-108, Washington, DC. <http://www.gao.gov/pas/2003/d03108.pdf>. (As of January 2003)

In its 2001 performance and accountability report on the Department of Transportation, GAO identified important safety, security, acquisition, financial management, and other issues facing the department. The information GAO presents in this report is intended to help sustain congressional attention and a departmental focus on continuing to make progress in addressing these challenges—and others that have arisen since 2001—and ultimately overcoming them. This report is part of a special series of reports on government-wide and agency-specific issues.

Making Our Transportation System Work Better and Together—Regional Concept of Transportation Operations. Maricopa Association of Governments, Phoenix, AZ.
<http://www.mag.maricopa.gov/pdf/cms.resource/RCTO-in-10min-extra.ppt>. (As of January 2003)

This project has developed a Regional Concept of Transportation Operations (RCTO) or a Regional Transportation Operations Plan for the Phoenix Metropolitan region. It is a plan that describes how all the concerned agencies will work together to improve operations.

Bolton, P. *Managing Pedestrians During Evacuation of Metropolitan Areas.* U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.
http://www.ops.fhwa.dot.gov/publications/pedevac/ped_evac_final_mar07.pdf. (As of March 2007)

The September 11, 2001, (or 9/11) attacks on the high-profile workplaces of the World Trade Center (WTC) in New York City and the Pentagon in the Washington, DC area, made real the impact of an unexpected, or “no-notice,” event in a metropolitan setting. The news coverage of the events of 9/11 showed thousands of people leaving the area of the WTC on foot. The evacuation from the borough of Manhattan included not only the typical traffic congestion expected in an evacuation in the United States, but thousands of pedestrians moving along with, or among, the vehicles.

When a large-scale, damaging event has occurred or the imminent threat of one has become known, transportation agencies working with public safety officials have traditionally had two principal objectives:

- Minimize the time it takes to get an adequate force of emergency responders to the scene where they can help victims, provide assessments, and control access.
- Maximize the proportion of the population moved away from the hazardous area without being subjected to other risks (e.g., traffic crashes, prolonged exposure to the danger).

Evidence that large numbers of pedestrians may be part of an evacuation raised questions within the Federal Highway Administration (FHWA) about what actions are needed to manage pedestrian traffic during metropolitan evacuations and what FHWA can contribute in this area to ensure safe and effective movement of pedestrians while minimizing their impact on vehicular movement.

Managing Traffic Incidents and Roadway Emergencies. National Highway Institute (NHI) Course No. 133048. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.
http://www.nhi.fhwa.dot.gov/training/course_detail.aspx?num=FHWA-NHI-133048&topicnum=133. (As of January 2010)

This workshop (Course Number 133048) is recommended for any location regardless of the state-of-the-practice in effective management of traffic incidents. Participants include mid-level management and on-scene supervisory level persons from law enforcement, fire and rescue, emergency communications, transportation, towing and recovery, traffic reporting media, and other agencies or companies involved in

resolving traffic incidents.

Latoski, S. P., W. M. Dunn, B. Wagenblast, J. Randall, and M. D. Walker. *Managing Travel for Planned Special Events*. FHWA-OP-04-010. Federal Highway Administration (FHWA). Washington, DC. http://ops.fhwa.dot.gov/program_areas/sp-events-mgmt/handbook/handbook.pdf. (As of September 2003)

This handbook is a comprehensive treatment for planning for and managing special events of all types. The document presents and recommends policies, regulations, planning, and operational processes; suggests mitigation strategies; identifies equipment and personnel resources; and points out technology applications used in the advance planning, management, and monitoring of travel for planned special events.

The handbook was written to assist responsible agencies in managing the ever-increasing number of planned special events impacting transportation system operations in rural, urban, and metropolitan areas. It communicates to a wide audience, assisting readers that possess the following backgrounds: (1) novice planned special event practitioner, (2) experienced planned special event practitioner, (3) local, single-jurisdiction event planning and management, and (4) regional, multi-jurisdiction event planning and management.

Manual on Uniform Traffic Control Devices, U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://mutcd.fhwa.dot.gov/>. (As of February 2010)

The Manual on Uniform Traffic Control Devices (MUTCD) defines the standards used by road managers nationwide to install and maintain traffic control devices on all streets and highways. The MUTCD is published by the FHWA under 23 Code of Federal Regulations (CFR), Part 655, Subpart F. Section 6G.19 sets guidance and standards for control of traffic through incident areas. States must adopt the 2009 National MUTCD as their legal State standard for traffic control devices within two years from December 2009.

Maryland's Reaction and Response to the Events of September 11th—A Case Study. American Association of State Highway and Transportation Officials (AASHTO) Security Task Force, Washington, DC. <http://security.transportation.org/sites/security/docs/MD911Final.pdf>. (As of January 2002)

This document describes the activities taken by the Maryland Department of Transportation (MDOT) following the attacks of September 11, 2001. Major lessons learned in the wake of the September 11th events are that: (1) coordination between and among the MDOT agencies, divisions, and departments was reinforced through procedures, a set of protocols (including an Emergency Operations Plan since 1997); (2) employees are empowered with the necessary authority to act quickly and flexibly at the operations level; and (3) training was effective and reinforced procedures and protocols. Communications, notably interoperability, appears to be an area of weakness that needs attention on a regional basis.

MBTA Safety Department, Emergency Response Exercise. Massachusetts Bay Transportation Authority (MBTA), Boston, MA.

This document is a final report on the Red Line Emergency Response Exercise held in Quincy, Massachusetts on May 23, 1999. The purpose of the exercise was to evaluate the ability of local emergency responders to manage a MCI involving a Rapid Transit train. Also, the exercise provided the MBTA with an opportunity to assess the pre-exercise training which was provided to Quincy and surrounding Fire, Police, and Emergency Medical Service agencies by the MBTA. This file contains actual letters, press releases, drill scenarios, and after action reports used to assess the effectiveness of the exercise.

MBTA Safety Department, Emergency Response Exercise. Massachusetts Bay Transportation Authority (MBTA), Boston, MA.

This document is a final report on the full scale Emergency Response Exercise held in Attleboro, Massachusetts on the Commuter Rail Line on September 17, 2000. The purpose of the exercise was to evaluate the ability of local emergency responders to manage a mass casualty incident involving a Commuter Rail train. Also, the exercise enabled the MBTA and Amtrak the opportunity to assess the pre-exercise training which was provided to Attleboro and surrounding Fire, Police, and Emergency Medical Service agencies. This file contains actual letters, press releases, drill scenarios, and after action reports used to assess the effectiveness of the exercise.

Freitas, M. Meeting the Information Needs for Surface Transportation Operations. U.S. Department of Transportation (U.S.DOT), Intelligent Transportation Systems Joint Program Office (ITS JPO), Washington, DC.
<http://onlinepubs.trb.org/onlinepubs/archive/conferences/INFOStructure/proceedings/INFOstructureFreitas.pdf>. (As of August 2002)

This PowerPoint presentation discusses the need for a National initiative to provide critical, real-time information on system conditions for security management, congestion management, weather response and traveler information that will support both National and local transportation management needs.

Minnesota DOT Statewide R/WIS Project. National Transportation Communications for ITS Protocol—NTCIP 9008 v01.06, Washington, DC.
<http://www.ntcip.org/library/documents/pdf/9008v01-06.pdf>. (As of January 2003)

Field deployment of NTCIP-conforming equipment has begun. State and local Departments of Transportation and their consultants are aware of the interoperability and interchangeability features promised by the NTCIP and are including references to the NTCIP in their procurement documents. For all but a few, this is their first experience with the NTCIP. The objective is to compile an unbiased investigation that incorporates the perspectives from different implementation positions. This document focuses on one of the ESS implementations using the NTCIP, but it does not attempt to explain the details of the NTCIP.

Model Procedures for Response of Emergency Vehicles During Hurricanes and Tropical Storms. International Association of Fire Chiefs, Fairfax, VA.
http://www.iafc.org/associations/4685/files/safetyApp_IAFCmodelProcededsVehiclesInHurricanes.pdf. (As of January 2008)

The purpose of this guide is to provide guidance to chief officers in establishing a policy for response during hurricanes and coastal storms to minimize the risk to fire/EMS personnel and to protect the human, physical and cyber infrastructure critical to safeguard a community before, during and after a storm. This guidance provides a common framework on which departments may build a local protocol tailored to a specific community.

Nation's First Automated Alert System for Homeland Security and Emergency Response Goes "Live" In Oregon with Portland 9-1-1. Tripwire.com—Tripwire, Inc., Portland, OR.. (As of August 2003)

RAINS-Net Press Release: RAINS-Net and Portland 9-1-1 Team to Deliver Official Emergency Incident Information to Local Schools, Businesses and Government Agencies, Over the Internet.

National Capital Region (NCR) Metropolitan Interoperability Radio System (MIRS) Memorandum of Understanding (MOU). Washington Metropolitan Council of Governments, Washington, DC.
http://www.interoperability.virginia.gov/pdfs/NCR_MIRS_MOU.pdf. (As of May 2005)

This Memorandum of Understanding between the District of Columbia and nearby localities in the states of Maryland and Virginia describes the Metropolitan Interoperability Radio System (MIRS). The MIRS comprises an interface/interconnect system that features the Raytheon/JPS Communications ACU-1000, an audio matrix switch. The basic system components are interface modules, each of which is designed to connect to radios of disparate frequencies, telephone, and voice over IP (VoIP) components. The computer-controlled system can be configured to create up to seven different patches simultaneously. The system configuration includes primary agencies, which can be interconnected immediately, and secondary agencies, which require the agency controlling the system to manually change radio channels at the switch.

National Incident Management System. U.S. Department of Homeland Security (DHS), Washington, DC. www.fema.gov/pdf/emergency/nims/NIMS_core.pdf. (As of December 2008)

NIMS represents a core set of doctrine, concepts, principles, terminology, and organizational processes that enables effective, efficient, and collaborative incident management. The NIMS framework uses a systematic approach for preparedness. This document was developed through a collaborative intergovernmental partnership with significant input from the incident management functional disciplines, the private sector, and nongovernmental organizations. Originally published on March 1, 2004, the document was revised in 2007 to reflect contributions from stakeholders and lessons learned during recent incidents.

National Incident Management System, Basic Guidance for Public Information Officers (PIOs). U.S. Department of Homeland Security (DHS), Washington, DC.
http://www.fema.gov/library/file?type=publishedFile&file=basic_guidance_for_pios_final_draft_12_06_07.pdf&fileid=aa3de3b0-acd0-11dc-9779-001185636a87. (As of November 2007)

The goal of this publication is to provide operational practices for performing PIO duties within the Incident Command System (ICS). It offers basic procedures to operate an effective Joint Information System (JIS). During an incident or planned event, coordinated and timely communication is critical to effectively help the community. Effective and accurate communication can save lives and property, and helps ensure credibility and public trust. This *Basic Guidance for Public Information Officers* provides fundamental guidance for any person or group delegated PIO responsibilities when informing the public is necessary. The guidance also addresses actions for preparedness, incident response, Joint Information Centers (JICs), incident recovery, and Federal public information support. The guidance material is adaptable to individual jurisdictions and specific incident conditions.

National Incident Management System, FEMA 501 Draft. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC.
<http://www.fema.gov/pdf/emergency/nrf/nrf-nims.pdf>. (As of August 2007)

The National Incident Management System (NIMS) framework sets forth the comprehensive national approach to improving emergency management, incident response capabilities, and coordination processes across the country. This document discusses the five major components that make up this systems approach: Preparedness, Communications and Information Management, Resource Management, Command and Management, and Ongoing Management and Maintenance.

National Infrastructure Protection Plan [Web site]. U.S. Department of Homeland Security (DHS), Washington, DC.
http://www.dhs.gov/xprevprot/programs/editorial_0827.shtm#1. (As of January 2009)

The National Infrastructure Protection Plan (NIPP) and supporting Sector-Specific Plans (SSPs) provide a coordinated approach to critical infrastructure and key resources (CI/KR) protection roles and responsibilities for federal, state, local, tribal, and private sector security partners. The NIPP sets national priorities, goals, and requirements for effective distribution of funding and resources which will help ensure that our government, economy, and public services continue in the event of a terrorist attack or other disaster. The Web site provides a link to download the NIPP and other documents of interest.

National Interoperability Field Operations Guide, Version 1.0. U.S. Department of Homeland Security (DHS), Office of Emergency Communications, Washington, DC.
http://www.interoperability.virginia.gov/TacticalCommunications/NIFOG_Final.pdf. (As of September 2007)

The National Interoperability Field Operations Guide (NIFOG) is a collection of technical reference material for radio technicians responsible for radios that will be used in disaster response applications. The NIFOG includes information from the National Interoperability Frequency Guide (NIFG), the instructions for use of the NIFG, and other reference material; formatted as a pocket-sized guide for radio technicians to carry with them.

Ham, D. B. and S. Lockwood. *National Needs Assessment for Ensuring Transportation Infrastructure Security*. American Association of State Highway and Transportation Officials (AASHTO) Security Task Force, Washington, DC.
<http://www.transportation.org/sites/security/docs/NatlNeedsAssess.pdf>. (As of October 2002)

This study examines three key security planning program areas: (1) protecting critical mobility assets; (2) enhancing traffic management capabilities; and (3) improving state DOT emergency response capabilities. Total costs for the proposed initiatives, including capital investment and operations and maintenance expenses during the TEA-21 6-year reauthorization period, are estimated at \$10.5 billion. In addition to the national security benefits offered by the prospective program, investment in the initiatives is expected to yield important nonsecurity gains, including (1) safety improvements to bridges and tunnels; (2) enhanced operational capabilities of the surface transportation network; and (3) upgraded emergency response and management capabilities for state DOTs.

Wallace, C. E., S. Lockwood, and D. Yohanan. *National Needs Assessment for Ensuring Transportation Infrastructure Security (2009—2015)*. American Association of State Highway and Transportation Officials (AASHTO) Special Committee on Transportation Security. Washington, DC.
<http://www.trb.org/TRBNet/ProjectDisplay.asp?ProjectID=2328>. (As of January 2009)

This study updated the 2002 Needs Assessment and added transit and commercial vehicle security needs to that of highway infrastructure. It also added needs for all state transportation agencies (not just DOTs), and embraced the all-hazards threat posture that is now common in security planning and assessment. An aggressive program of explicit funding authorization estimated at \$21.4 billion was recommended during the six-year period covered by the Reauthorization of SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users), which is expected to be a 6-year reauthorization period, beginning on or after October 1, 2009 (although the transportation Reauthorization will not cover all the funding needed—a substantial amount will come from the U.S. Department of Homeland Security).

National Preparedness Guidelines. U.S. Department of Homeland Security (DHS), Washington, DC.
http://www.fema.gov/pdf/emergency/nrf/National_Preparedness_Guidelines.pdf. (As of September 2007)

The Guidelines, including the supporting Target Capabilities List, simultaneously published online, supersedes the Interim National Preparedness Goal and defines

what it means for the Nation to be prepared for all hazards. There are four critical elements of the Guidelines:

- The National Preparedness Vision
- The National Planning Scenarios
- The Universal Task List (UTL)
- The Target Capabilities List (TCL)

The Guidelines reinforce the fact that preparedness is a shared responsibility. They were developed through an extensive process that involved more than 1,500 federal, state, and local officials and more than 120 national associations. They also integrate lessons learned following Hurricane Katrina and a 2006 review of states' and major cities' emergency operations and evacuation plans.

National Response Framework. U.S. Department of Homeland Security (DHS), Washington, DC. <http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf>. (As of January 2008)

This guideline replaced the earlier National Response Plan, and was expanded in scope, audience, and breadth. The National Response Framework (NRF) is the definitive guide that delineates the nation's response doctrines, responsibilities, and structures. It embraces the National Incident Management System (NIMS) and improved the emergency support function (ESF) descriptions. The NSF and other related documents may be found on the Web at: <http://www.fema.gov/emergency/nrf/>. (As of June 2008)

There are three sets of annexes that support the Framework:

- Emergency Support Function Annexes:
 - ESF #1—Transportation
 - ESF #2—Communications
 - ESF #3—Public Works and Engineering
 - ESF #4—Firefighting
 - ESF #5 —Emergency Management
 - ESF #6—Mass Care, Emergency Assistance, Housing, and Human Services
 - ESF #7—Logistics Management and Resource Support
 - ESF #8—Public Health and Medical Services
 - ESF #9—Search and Rescue
 - ESF #10—Oil and Hazardous Materials Response
 - ESF #11—Agriculture and Natural Resources
 - ESF #12—Energy
 - ESF #13—Public Safety and Security
 - ESF #14—Long-Term Community Recovery
 - ESF #15—External Affairs
- Support Annexes:
 - Critical Infrastructure and Key Resources

- Financial Management
- International Coordination
- Private-Sector Coordination
- Public Affairs
- Tribal Relations
- Volunteer and Donations Management
- Worker Safety and Health
- The Incident Annexes describe the concept of operations to address specific contingency or hazard situations or an element of an incident requiring specialized application of the Framework. They include the following Annexes that have been updated and supersede the 12/04 versions:
 - Biological Incident (current as of 8/08)
 - Catastrophic Incident (current as of 11/08)
 - Food and Agriculture Incident (current as of 8/08)
 - Mass Evacuation (current as of 6/08)
 - Nuclear/Radiological Incident (current as of 6/08)
- At this time, the following Incident Annexes published with the National Response Plan remain in effect:
 - Incident Annex Introduction
 - Cyber Incident
 - Terrorism Incident Law Enforcement and Investigation
 - Note: The Oil and Hazardous Materials Incident Annex has been superseded by the ESF #10—Oil and Hazardous Materials Response Annex.

National Response Framework (NRF) Resource Center [Web site]. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://www.fema.gov/emergency/nrf/mainindex.htm>. (As of January 2009)

The Department of Homeland Security National Response Framework (NRF) Resource Center Web site offers information, reference documents, and training resources to support the National Response Framework. The National Response Framework presents the guiding principles that enable all response partners to prepare for and provide a unified national response to disasters and emergencies—from the smallest incident to the largest catastrophe. The Framework establishes a comprehensive, national, all-hazards approach to domestic incident response.

National Response Framework (NRF) Resource Center-Job Aids/SOPs [Web site]. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://www.fema.gov/emergency/nrf/jobaids.htm>. (As of January 2009)

This section of the National Response Framework (NRF) Web site provides a list of

Joint Field Office (JFO) guides written to support the National Response Plan. These Guides are in the process of being updated to reflect the National Response Framework. Until new Guides are developed, these current procedures remain in effect.

Wolshon, B., E. Urbina, and M. Levitan. *National Review of Hurricane Evacuation Plans and Policies*. Louisiana State University (LSU) Hurricane Center, Baton Rouge, LA. www.iacptechnology.org/Evacuation/LSUevacuationReview2002.pdf. (As of 2001)

A national review of evacuation plans and practices was conducted to determine what the latest evacuation policies and strategies are and how they differ from one location to another, and to increase the level of knowledge and awareness of these new evacuation practices. The study was carried out from a transportation perspective and included both a review of transportation literature and a survey of DOT and emergency management officials in coastal states threatened by hurricanes. The results of the survey highlight many of the current needs and important issues in the field. The survey also showed that transportation organizations have recognized many of these issues and are working to address them.

National Traffic Incident Management Coalition (NTIMC) [Web site]. American Association of State Highway and Transportation Officials, Washington, DC. <http://timcoalition.org/?siteid=41&pageid=590>. (As of January 2009)

The National Traffic Incident Management Coalition (NTIMC) is a unique forum where national organizations representing major stakeholders involved in traffic incident response work together. The members represent the Emergency Medical Services, Fire, Law Enforcement, Public Safety Communications, Towing and Recovery, and Transportation communities. NTIMC promotes multidisciplinary, multi-jurisdictional Traffic Incident Management (TIM) programs to achieve enhanced responder safety; safe, quick traffic incident clearance; and more prompt, reliable, interoperable communications. This Web site provides pertinent documentation, training resources, a meeting calendar, etc.

National Unified Goal for Traffic Incident Management. National Traffic Incident Management Coalition. Washington, DC. <http://www.transportation.org/sites/ntimc/docs/NUG%20Unified%20Goal-Nov07.pdf>. (As of November 2007)

The National Unified Goal (NUG) for Traffic Incident Management (TIM), formally announced in November 2007, constitutes the first time in United States history where a consensus of multiple jurisdictional, multi-disciplinary organizations adopted a common goal for TIM. The three-pronged goal is as follows:

- Responder Safety
- Safe, Quick Clearance
- Prompt, Reliable Incident Communications.

A set of 18 NUG strategies are aimed at reducing congestion, avoiding secondary incidents, and improving safety for both the responders as well as the traveling public. The NUG and supporting documents and resources can be found at.

<http://timcoalition.org/>. (As of June 2008)

Mitretek Systems, Inc. *NCHRP Report 520: Sharing Information Between Public Safety and Transportation Agencies for Traffic Incident Management*. Transportation Research Board, Washington, DC. http://www.trb.org/news/blurb_detail.asp?id=3748. (As of January 2009)

Interagency exchange of information promotes rapid, efficient, and appropriate response from all agencies. In NCHRP Project 3-63, Mitretek Systems identified several regions across the United States with active traffic incident management programs. They then visited both public safety and transportation agencies in these regions and conducted in-depth interviews to determine how information is being shared and how well those methods work. The report includes detailed studies of the regions visited and a summary of lessons learned.

Science Applications International Corporation (SAIC). *NCHRP Report 525: Volume 1, Surface Transportation Security, Responding to Threats: A Field Personnel Manual, Volume 1*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

This manual includes a draft template that contains basic security awareness training in a workbook format that can be redesigned as a pamphlet, glove-box brochure, or other user-specific document. This NCHRP manual emphasizes noticing and reporting behavior that may be part of the planning stages of an event, and explains how an increased level of attention on the part of all employees can deter criminal and terrorist plans prior to implementation.

Balog, J., P. Bromley, A. Boyd, J. Caton, et al. *NCHRP Report 525: Volume 2, Surface Transportation Security, Information Sharing and Analysis Centers: Overview and Supporting Software Features*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

This report provides a survey of how intelligence information is organized and shared by transportation agencies. This survey provides guidance and template for how critical information may be organized by a transportation agency. Particular emphasis is placed upon the examination of commercially available technology systems used in the diffusion of information. Surveyed systems include:

- Activation Information Management (AIM);
- Disaster Management Interoperability System (DMIS);
- Integrated Transportation Analysis (ITA); and
- Information Sharing and Analysis Centers (ISAC).

Dornan, D. L., and M. P. Maier. *NCHRP Report 525, Surface Transportation Security, Volume 3: Incorporating Security into the Transportation Planning Process*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

This report contains the results of research into the status of state and metropolitan transportation planning processes and the extent to which security issues and

strategies are reflected in long-range plans and priority programs. The study focused on consideration of security in the transportation planning processes of state departments of transportation (DOTs) and metropolitan planning organizations (MPOs). It included a comprehensive review of recent literature and a review of transportation improvement programs of 10 major metropolitan areas and more detailed case examinations in four areas. This report presents a broad assessment of the status, constraints, opportunities, and strategies for incorporating security into transportation planning at the state and metropolitan levels and for including security-related projects in their priority programming decisions

AECOM Consultant, Inc., Maier Consulting, Inc., and Peter Schauer Associates. *NCHRP Report 525: Surface Transportation Security, Volume 4: A Self-Study Course on Terrorism-Related Risk Management of Highway Infrastructure*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

This Self-Study Course on Terrorism-Related Risk Management of Highway Infrastructure is designed to provide a general background in terrorism-related risk management for highway infrastructure. The report is also designed to assist bridge and structures engineers and managers in identifying critical highway assets and their potential vulnerabilities, developing possible countermeasures to prevent or ameliorate threats to such assets, and determining the capital and operating costs of such countermeasures.

Lockwood, S., J. O'Laughlin, D. Keever, and S. Weiss. *NCHRP Report 525: Surface Transportation Security, Volume 6, Guide to Emergency Transportation Operations*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

This document outlines a coordinated, performance-oriented, all-hazards approach for improved management of traffic incidents, natural disasters, security events, and other emergencies on the highway system. This document responds to the need to reflect changes in national response planning requirements, build on completed research such as ETO, and replace the 2002 Guide. The ETO is designed to be operationally oriented and practical guidance for state transportation agencies to use as they plan, organize, staff, train, exercise, manage, implement, and fund preparations to carry out their emergency responsibilities. These responsibilities include all transportation modes that are under state control or influence and functions performed by state transportation agencies in support of state and local emergencies (i.e., Emergency Support Functions under NIMS as reflected in state plans).

NCHRP Report 525: Surface Transportation Security, Volume 7: System Security Awareness for Transportation Employees. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

System Security Awareness for Transportation Employees is a CD-based interactive multimedia training course designed to help transportation employees, supervisors, and managers define their roles and responsibilities in transportation system

security, recognize suspicious activities and objects, observe and report relevant information, and minimize harm to themselves and others. Course modules focus on system security, reducing vulnerability, suspicious activity, suspicious objects, top priorities, and preparation.

Boyd, A., J. Caton, A. Singleton, P. Bromley, and C. Yorks. *NCHRP Report 525: Volume 8, Surface Transportation Security/TCRP Report 86, Volume 8: Public Transportation Security, Continuity of Operations (COOP) Planning Guidelines for Transportation Agencies*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

The objective of the guideline is to provide guidelines for state and local transportation agencies to develop, implement, maintain, train for, and exercise COOP capabilities. The guidelines are expected to be applied by designated agency continuity planners using templates to customize COOP plans for their local conditions. The templates and guidelines should provide a managed and measurable process to ensure continuation of essential operations. Execution of these plans helps transportation agencies ensure the performance of critical services even in an operating environment that is threatened, diminished, or incapacitated.

The planning guidelines in this report are supplemented online with downloadable worksheets, a template for a completed COOP plan, a series of brochures that can be used to explain the COOP planning process to staff, a draft PowerPoint presentation that may be customized and presented to transportation executive leadership, and more than 300 resource documents organized in an electronic COOP library.

Friedman, D., D. Bratvold, S. Mirsky, G. Kaiser, et al. *NCHRP Report 525: Surface Transportation Security, Volume 10: A Guide to Transportation's Role in Public Health Disaster*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

This guide examines development of transportation response options to an extreme event involving chemical, biological, or radiological agents. The report contains technical information on chemical, biological, and radiological threats, including vulnerabilities of the transportation system to these agents and consequence-minimization actions that may be taken within the transportation system in response to events that involve these agents. The report also includes a spreadsheet tool, called the Tracking Emergency Response Effects on Transportation (TERET), which is designed to assist transportation managers with recognition of mass-care transportation needs and identification and mitigation of potential transportation-related criticalities in essential services during extreme events.

NCHRP Synthesis 293—Reducing and Mitigating Impacts of Lane Occupancy during Construction and Maintenance: A Synthesis of Highway Practice. Transportation Research Board, Washington, DC. http://www.trb.org/news/blurbs_detail.asp?id=1886. (As of January 2009)

A major problem facing most transportation agencies is how to reduce lane occupancy and mitigate its impact on road users during construction and

maintenance operations. This synthesis presents the results of a literature review and a survey questionnaire that was distributed to transportation agencies in the United States and Canada in order to identify current techniques, methods, and processes used to address this problem. Forty-four agencies responded. The phases of a project in which these techniques are implemented include programming, planning, design, contracting, and construction, and maintenance.

Carson, J. L., and R. G. Bylsma. *NCHRP Synthesis 309—Transportation Planning and Management for Special Events: A Synthesis of Highway Practice*. Transportation Research Board, Washington, DC. http://www.trb.org/news/blurbs_detail.asp?id=1327. (As of January 2009)

This Transportation Research Board report presents the state-of-the-practice of transportation planning and management of special events. Specifically, it addresses how various agencies are planning, coordinating services, and managing the overall transportation systems for both frequent and infrequent events. The report will be of interest to any organization with a stake in special event planning and its management process, including transportation departments, law enforcement agencies, fire departments, the media, event organizers, planning and political bodies, and the military. Topics covered include: the range of special events that agencies and organizations need to plan for; stakeholders and institutional arrangements; common elements among plans, processes and procedures, manuals, operational strategies, the range and type of services provided, tools and mechanisms used, performance measures developed, and resources allocated; and the effectiveness of these plans, models, resources, and tools.

NCHRP Synthesis 313—State DOT Outsourcing and Private-Sector Utilization: A Synthesis of Highway Practice. Transportation Research Board, Washington, DC. http://www.trb.org/news/blurbs_detail.asp?id=1495. (As of January 2009)

This Transportation Research Board report will be of interest to state departments of transportation (DOTs), as well as to other transportation professionals and the public who seek to leverage their work forces by outsourcing key activities. The report examines the current practices in outsourcing, what decisions are involved in deciding when to outsource, procuring and administering outsourced services, what are the most commonly outsourced activities, and determining the effectiveness of outsourcing. This report is an update of *NCHRP Synthesis 246: Outsourcing of State Highway Facilities and Services*, which provided a comprehensive look at the status of outsourcing as it existed in 1997, and the data compiled for this synthesis are compared with that of the earlier synthesis, where appropriate.

Latoski, S. P., and W. M. Dunn. *NCHRP Synthesis 318—Safe and Quick Clearance of Traffic Incidents*, Transportation Research Board, Washington, DC. http://www.trb.org/news/blurbs_detail.asp?id=1868. (As of January 2009)

This synthesis study reviews and documents quick clearance legislation and responder policies and practices regarding incident clearance for both urban and rural areas. Key areas to be addressed include, but are not limited to: legislation that requires moving vehicles involved in minor crashes; liability and tort law related to

moving vehicles, cargo, or debris; legislation to limit liability for damages that may occur during quick clearance; public information and driver education efforts; benefit analyses related to quick clearance activities; impact of financial responsibility on decision making at the scene; scope of training for all involved in the clearance of highway incidents; and institutional and programmatic activities to support quick clearance.

Tuydes, H. *Network Traffic Management under Disaster Conditions*. Northwestern University, Evanston, IL. http://san-antonio.tamu.edu/trbanb10-3/Resources/Tuydes_Presentation.pdf. (As of January 2003)

This document explores common transportation issues under disaster pre-disaster, during-disaster, and after-disaster conditions offers recommendations to alleviate the issues. A methodology is proposed for modeling and network redesign, including example scenarios.

Wolshon, B. *New Orleans Contraflow Evacuation Segment Traffic Simulation Models*. Louisiana State University (LSU) Hurricane Center, Department of Civil and Environmental Engineering, Baton Rouge, LA. http://san-antonio.tamu.edu/trbanb10-3/Resources/Wolshon_Presentation_2004.pdf. (As of January 2004)

This presentation developed by the Louisiana State University Hurricane Research Center analyzes the problem of traffic demand faced if a hurricane forces the evacuation of New Orleans. Existing contraflow plans and equipment are described. Traffic simulation models, important tools in offering planners a glimpse into the probable outcome of an evacuation, are discussed. The document uses the simulator CORSIM to illustrate a hypothetical New Orleans evacuation.

NFPA 1250 Recommended Practice in Emergency Service Organization Risk Management. National Fire Protection Association (NFPA), Quincy, MA. <http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=1250>. (As of January 2009)

NFPA 1250 Recommended Practice in Emergency Service Organization Risk Management establishes minimum criteria to develop, implement, or evaluate an emergency services organization risk management program for effective risk identification, control, and financing. This recommended practice is intended to provide those with the responsibility for risk management with the process to control or minimize the impact of detrimental events on the entity.

NFPA 1561 Standard on Emergency Services Incident Management Systems. National Fire Protection Association, Quincy, MA. <http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=1561>. (As of January 2009)

This standard contains the minimum requirements for an incident management system to be used by emergency services to manage all emergency incidents. The purpose of this standard is to define and describe the essential elements of an incident management system that meets the requirements of Chapter 8 of NFPA

1500, Standard on Fire Department Occupational Safety and Health Program; 29 CFR 1920.120(q)(3), "Procedures for handling emergency response," and HSPD-5.

NFPA 1600 Standard on Disaster/Emergency Management and Business Continuity Programs. National Fire Protection Association, Quincy, MA.

<http://www.nfpa.org/assets/files/PDF/NFPA1600.pdf>. (As of January 2007)

The NFPA Standards Council established the Disaster Management Committee in January 1991. The committee was given the responsibility for developing documents relating to preparedness for, response to, and recovery from disasters resulting from natural, human, or technological events. The 2007 edition incorporates changes to the 2004 edition, expanding the conceptual framework for disaster/emergency management and business continuity programs. Previous editions of the standard focused on the four aspects of mitigation, preparedness, response, and recovery. This edition identifies prevention as a distinct aspect of the program, in addition to the other four. Doing so brings the standard into alignment with related disciplines and practices of risk management, security, and loss prevention.

NFPA 1620 Recommended Practice for Pre-Incident Planning. National Fire Protection Association (NFPA), Quincy, MA.

<http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=1620>. (As of January 2009)

This document provides criteria for evaluating the protection, construction, and operational features of specific occupancies to develop a pre-incident plan should be used by responding personnel to manage fires and other emergencies in these facilities using the available resources. The primary purpose of a pre-incident plan is to help responding personnel effectively manage emergencies with available resources.

NIMS Compliance and Technical Assistance [Web site]. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC.
http://www.fema.gov/emergency/nims/nims_compliance.shtm. (As of January 2009)

In 2004, the Department of Homeland Security released the National Incident Management System (NIMS) as required by Homeland Security Presidential Directive (HSPD)—Management of Domestic Incidents and HSPD-8 Preparedness. HSPD-5 established and designated the National Integration Center (NIC) Incident Management Systems Division as the lead federal entity to coordinate NIMS compliance. This Web site provides helpful information and resources to support NIMS compliance.

O'Laughlin, J, C. A. Macaulay, and J. Schuh. *NIMS Resource Guide for TMC Professionals.* I-95 Corridor Coalition, College Park, MD.

http://www.i95coalition.net/i95/Portals/0/Public_Files/pm/reports/I95CC%20NIMS%20Guide%20-%2011-3B.pdf. (As of February 2010)

This guide supplements the FHWA's *Simplified Guide to the Incident Command System for Transportation Professionals* by providing guidance explicitly for

Transportation Management Center (TMC) operations. The report provides TMC operations staff with a clear understanding of NIMS and their role with that system. It includes a description of the NIMS *architecture* so that the operations staff can better realize their role. While the guide is directed at I-95 Corridor Coalition member states, the information is applicable nationwide.

NIMS Training [Web site]. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC.
http://www.fema.gov/emergency/nims/nims_training.shtm. (As of January 2009)

A critical tool in promoting the nationwide implementation of NIMS is a well-developed training program that facilitates NIMS training throughout the nation, growing the number of adequately-trained and qualified emergency management/response personnel. Closely related to the training, core competencies will form the basis of the training courses' learning objectives and personnel qualifications that validate proficiency. This Web site provides a link to the Five-Year NIMS Training Plan, Fact Sheets on NIMS-required training courses, information on recommended training courses, and other training recourses to support MINS compliance.

North Carolina's Hurricane Operations. North Carolina Department of Transportation (NCDOT), Raleigh, NC. http://san-antonio.tamu.edu/trbanb10-3/Resources/NC_evacuation_planning.pdf. (As of January 2003)

This PowerPoint presentation provides an overview of the Hurricane planning operations for NCDOT with focus on the I-40 Reversal Plan, including the type of equipment needed for implementation and information disseminated to the public; EIC (Emergency Information Center)—EOC (Emergency Operations Center) Coordination; the Detection Project; current ITS Devices & Traveler Information; and, their Incident Management Interagency Teams.

NTI Courses, Workplace Safety and Security [Web site], U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.
<http://www.ntionline.com/topic.asp?TopicArea=5>. (As of January 2009)

This Web site provides the current list of National Transit Institute Workplace Safety and Security courses.

Oklahoma City—Seven Years Later: Lessons for Other Communities. Oklahoma City National Memorial Institute for the Prevention of Terrorism (MIPT), Oklahoma City, OK.
<http://www.terrorisminfo.mipt.org/pdf/MIPT-OKC7YearsLater.pd>. (As of January 2002)

This report summarizes lessons learned during and after the Oklahoma City Bombing by the entire community. It offers recommendations for planning, initial response, on-going response, recovery, restoration and memorialization.

Operations Plan Guidance: Continuity of Operations (COOP)/Continuity of Government (GOG). Wisconsin County Government, Madison, WI.
<http://emergencymanagement.wi.gov/docview.asp?docid=271>. (As of June 2003)

This guidance is designed to assist Wisconsin counties with developing viable and executable contingency plans for the continuity of operations (COOP) and continuity of government (COG). COOP/COG planning is an effort to ensure that the capability exists to continue essential agency functions across a wide range of potential emergencies.

Booz-Allen & Hamilton. *Organizing for Regional Transportation Operations Conference Proceedings.* U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Transportation Research Board (TRB), Intelligent Transportation Society of America, Association of Metropolitan Planning Organizations, The Institute of Transportation Engineers (ITE), and the American Association of State Highway and Transportation Officials (AASHTO), Washington, DC .
http://plan4operations.dot.gov/docs/org_reg_trans2003.pdf. (As of January 2003)

The purpose of the conference was to discuss the challenges of multi-jurisdictional partnerships for metropolitan regional transportation operations and to establish potential next steps for support and advancing these partnerships nationwide. Key themes included the need to advance transportation operations on a regional scale is driving cooperation efforts among jurisdictions; partnerships depend on the development of trust among partners through working together to achieve common goals; an individual leader is key to the success of many partnerships; and the same tools and relationships used in a crisis situation are used in everyday transportation management.

Booz-Allen & Hamilton. *Organizing for Regional Transportation Operations: An Executive Guide.* U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA) and Institute of Transportation Engineers (ITE), Washington, DC.
<http://www.ite.org/library/ROOExecutiveGuide.pdf> (As of July 2001)

This guide provides an overview of the key features and critical elements impacting the development and long-term sustainability of regional operating organizations. It is intended to serve as a resource for transportation management and operations leaders and decision makers. The guide highlights the findings and lessons learned from six case studies developed in conjunction with the National Dialogue on Transportation Operations: TRANSCOM (NY/NJ/CT); TransLink (Vancouver, BC); Metropolitan Transportation Commission (San Francisco Bay Area); ITS Priority Corridor (Southern California); TranStar (Houston); AZTech (Phoenix). Although these case studies focus primarily on large metropolitan areas, many findings are broadly applicable to regions of all sizes.

Overview, ESF and Support Annexes, Coordinating Federal Assistance in Support of the National Response Framework. U.S. Department of Homeland Security (DHS), Washington, DC. <http://www.fema.gov/pdf/emergency/nrf/nrf-overview.pdf>. (As of January 2008)

This Overview supports and provides additional guidance concerning the Framework.

In particular, this document focuses on the essential processes for requesting and receiving federal assistance and summarizes the key response capabilities and essential support elements provided through the Emergency Support Function (ESF) Annexes and Support Annexes. The Overview includes the following topics:

- Key Players: Organizations and entities that may either need assistance or provide assistance
- Federal Assistance: Descriptions of the processes for requesting and obtaining federal assistance in support of states, tribes, local jurisdictions, and other federal partners
- Emergency Support Function Annexes: Summaries of the 15 ESF Annexes, which group federal resources and capabilities into functional areas to serve as the primary mechanisms for providing assistance at the operational level
- Support Annexes: Summaries of the 8 Support Annexes, which describe essential supporting aspects that are common to all incidents

Matherly, D. *Panic or Reasoned Response? The Human Element in Transportation Planning for Emergency Situations*. Transportation Research Board, 82nd Annual Meeting Session 482: Evacuation Research for Natural and Manmade Hazards, Washington, DC. http://san-antonio.tamu.edu/trbanb10-3/Resources/Matherly_Presentation_2004.pdf. (As of January 2003)

This presentation discusses typical human behavior in response to emergency situations and provides information and statistics on human behavior in three case studies: Hurricane Floyd; West Helena, Arkansas chemical plant explosion; and, an earthquake in Contra Costa County, in addition to identifying key elements in conveying effective message alerts.

Chang, G., and J. Y. Point-Du-Jour. *Performance Evaluation of CHART 1999—An Incident Management Program—in 1997: Final Report*. Maryland State Highway Administration, Baltimore, MD. http://www.google.com/url?sa=t&ct=res&cd=4&url=http%3A%2F%2Fwww.chart.state.md.us%2Fdownloads%2Freadingroom%2FCHART97_Final_Report.doc&ei=v9kwSISPB46Weq-AkcYB&usg=AFQjCNF3ngS_LGvrMNahOysavqldOTEAIQ&sig2=0OeaseUQr02aQ6CXMfPF0g. (As of May 2000)

This summary of the 1997 CHART Benefits Evaluation study was conducted for Maryland State Highway Administration (MSHA) by the Civil Engineering Department of the University of Maryland at College Park and MSHA staff. The purpose of this study is to assess the effectiveness of the Maryland CHART program with an emphasis on its ability to detect and respond to incidents on major freeways and highways. The efficiency of the entire incident management operations along with its resulting benefits also constitutes the core of the study.

Performance of the Fire Service During the 2003 Northeast Blackout and the Implications for Critical Infrastructure Protection. International Association of Fire Chiefs (IAFC), Fairfax, VA. http://www.iafc.org/associations/4685/files/NE_blackout_report.pdf. (As of November 2003)

The International Association of Fire Chiefs (IAFC) invited its members to participate in a survey regarding the impact of the power outage on the local fire department. Of the 8,350 members invited to participate in the Web-based survey, 899 (11 percent) responded during a 3-week period. The respondents represented career, combination and volunteer departments and municipalities of various sizes. The performance of the fire emergency service during the Northeastern and other large-scale power outages reveals four major findings that directly correlate to the fire department's ability to protect its community and the national infrastructure in a national emergency.

Mollaghasemi, M., and M. Aty. *Post-Disaster Dynamic Routing of Emergency Vehicle*. Department of Industrial Engineering, University of Central Florida, Orlando, FL. http://www.catss.ucf.edu/PDF_Files/Proj01-02/Mollaghasemi-Post-DisasterDynamic_41.pdf. (As of January 2002)

This document describes the *Post-Disaster Dynamic Routing of Emergency Vehicle* project performed by the University of Central Florida to develop a methodology for modeling of transportation networks in order to determine the fastest and most effective deployment strategy for emergency response services. The project aims at the development of a model for a post-event dynamic routing system. The model also determines the routes that should be taken to minimize the response time. This project uses VISSIM simulation software for the development of the model.

Science Applications International Corporation (SAIC). *Proceedings from the National Conference on Traffic Incident Management: A Road Map to the Future*. American Association of State Highway and Transportation Officials (AASHTO); Intelligent Transportation Society of America (ITS America); U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA); Transportation Research Board, Washington, DC. <http://pubsindex.trb.org/results.aspx#>. (As of June 2002)

The National Conference on Traffic Incident Management, jointly sponsored the American Association of State Highway and Transportation Officials, ITS America, and the Federal Highway Administration, was held to identify issues and actions as a roadmap to the future to improve traffic incident management program planning, field operations, and inter-agency communications. The top seven issues identified were: professionalize incident management; national program models and guidelines; creation of standards and guidelines for performance data; recognize regional focus in developing, operating, funding TIM technologies; develop regional/cross-agency systems architectures (based on standards); establish a clearinghouse for incident management data; and integrate TIM needs into highway planning and design.

Booz-Allen & Hamilton. *Proceedings of the National Summit on Transportation Operations*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.ops.fhwa.dot.gov/nat_dialogue.htm. (As of January 2009)

The National Summit on Transportation Operations was held in October 2001 to identify and discuss key strategies to advance operations in both reauthorization of the Transportation Equity Act for the 21st Century and future operational programs.

The majority of options and actions generated at the summit support and clarify eight broad themes: (1) increase focus on transportation operations at all levels in response to customer needs; (2) define transportation operations in a way that is meaningful to the public, public safety officials, and professionals; (3) enhance performance of the transportation system through performance-based decision-making and increased focus on safety, reliability, and security; (4) create linkages between traditional capital planning processes and planning for operations; (5) support and assist homeland security initiatives; (6) facilitate accelerated evolution of cultural change within transportation agencies to adopt policies and procedures that support operations; (7) enhance interagency coordination and cooperation; and (8) continue funding and support for operations programs and policies at the federal level, and encourage greater participating at state, regional, and local levels.

Project SAFECOM: Wireless Public SAFETY Interoperable COMMUNICATIONS [Web site]. United State Department of Homeland Security (DHS), Office of Emergency Communications (OEC), Washington, DC. <http://www.safecomprogram.gov/SAFECOM>. (As of January 2009)

SAFECOM is a communications program of the Department of Homeland Security. SAFECOM provides research, development, testing and evaluation, guidance, tools, and templates on interoperable communications-related issues to local, tribal, state, and federal emergency response agencies. This Web site provides members of the emergency response community and other constituents with information and resources to help them meet their communications and interoperability needs. It offers comprehensive information on topics relevant to emergency response communications and features best practices that have evolved from real-world situations.

Cohen, H. S., S. Austin, and J. Brenner. *Protecting Emergency Responders on the Highway*. Cumberland Valley Volunteer Firemen's Association, Shippensburg, PA. <http://www.cvvfa.org/downloads/whitepaper.pdf>. (As of January 2000)

This white paper provides recommendations to educate the public about hazards near emergency scenes through public education campaigns, updates to driver's education programs and driving manuals, defensive driver programs, and remedial driver education programs; to develop standard operating procedures for vehicle positioning, standard highly visible reflective apparel, and better understanding of de-committing resources and expeditiously reopening roadways; to adopt intelligent transportation solutions, such as automatic signal changers, remote cameras, highway advisory message boards, and radio advisory warnings, when feasible; and for continued research and development to assess performance and physiological effects of the color and intensity of warning lights on emergency vehicles while operating at the scene, especially for nighttime incidents.

Jackson, B. A., J. C. Baker, M. S. Ridgely, et al. *Protecting Emergency Responders, Volume 3: Safety Management in Disaster and Terrorism Response*. Rand Science and Technology Policy Institute and National Institute for Occupational Safety and Health (NIOSH), Arlington, VA and Cincinnati, OH. <http://www.rand.org/pubs/monographs/MG170/>. (As of January 2010)

This report addresses the protection of emergency responders against injury, illness, and death on just such rare occasions, when emergencies become disasters. This report focuses on preparedness (especially planning and training) and management as means of controlling and reducing the hazards emergency responders face. It provides a set of recommendations on how disaster site safety and health management might be improved.

Jackson, B., D. J. Peterson, J. T. Bartis, T. LaTourrette, et al. *Protecting Emergency Responders: Lessons Learned from Terrorist Attacks*. Rand Science and Technology Policy Institute, Arlington, VA. <http://rand.org/congress/terrorism/phase2/emergency.pdf>. (As of March 2002)

This report summarizes findings and recommendations from a conference that brought together emergency responders from the September 11 attacks in New York City and the Pentagon, the 1995 attack at the Alfred P. Murrah Federal Building in Oklahoma City, Oklahoma; and the emergency responses to the anthrax incidents that occurred in several locations through autumn 2001. The conference, sponsored by the National Institute for Occupational Safety and Health of the U.S. Centers for Disease Control and Prevention, documented the firsthand experiences of emergency responders regarding the performance, availability, and appropriateness of their personal protective equipment as they responded to these incidents.

Cambridge Systematics, Inc., Texas Transportation Institute, University of Washington, and Dowling Associates. *Providing a Highway System with Reliable Travel Times: Study 3-Reliability*. Transportation Research Board, Washington, DC. http://onlinepubs.trb.org/onlinepubs/f-shrp/f-shrp_webdoc_3.pdf. (As of September 2003)

This report reflects research conducted to develop a program that will greatly improve the reliability of highway travel times by reducing the frequency and effects of events that cause travel times to vary from day to day. This research supports the overall U.S.DOT goal summarized as “90/10 by 2010,” where the actions of transportation systems can result in travelers and shippers knowing their travel time within a 10 percent window on 9 out of 10 trips by 2010.

Public Information During Emergencies. Florida Department of Community Affairs, Tallahassee, FL. <http://floridadisaster.org/publications/indepth.pdf>. (As of January 2000)

The future success of emergency management lies in its technology—not just the precision and power of Geographic Information Systems and Hurricane Hunter aircraft. It is in the ability emergency officials to communicate with each other and the citizenry about the threat of and in the aftermath of any disaster. Florida has made the commitment to meet that future in some exciting new ways.

Public Safety and Wireless Communications Interoperability, Critical Issues Facing Public Safety Communications. Public Safety Wireless Network (PSWN) Program, A Joint Initiative of the Department of Justice (DOJ) and the Department of the Treasury, Washington, DC. <http://www.safecomprogram.gov/NR/rdonlyres/127FFF18-100D-4405-AA40-076B79F17B1B/0/interopbooklet.pdf>. (As of January 1998)

Two 1998 surveys of more than 2,000 public safety agencies identified the following obstacles to interoperability—spectrum limitations, funding limitations, incompatible technologies, and lack of systems planning. The document states that improving interoperability is a multidimensional challenge, requiring a long-term regulatory focus; continued push at all governmental levels for funding; coordinated planning of shared systems; and active information sharing and constant coordination among public safety officials and politicians from all levels of government.

Public Safety Coordination and Partnership Awareness Guide. Public Safety Wireless Network (PSWN) Program, A Joint Initiative of the Department of Justice (DOJ) and the Department of the Treasury, Washington, DC.

http://www.safecomprogram.gov/NR/rdonlyres/E456109A-CDEC-4679-948F-DE818E1CB8DE/0/coordination_and_partnerships_guide.pdf. (As of January 2001)

Emergency incidents increasingly require a high level of multi-agency and multifunctional response by emergency service providers. This guide provides information on how agencies are taking action to improve coordination and partnerships and facilitate multi-jurisdictional interoperability. This includes: membership agreements and fee-for-service arrangements; obtaining community buy-in in shared system development at the local level; sponsorship of interoperability efforts by senior-level leadership; FCC authorization of state licenses for public safety services in the 800 MHz band; and federal agency initiative to lead coordination and partnership efforts.

Franklin, R. B. *Public Safety Operations and Traffic Management—A Force for the Future.* ComCARE Alliance, Washington, DC.

<http://www.comcare.org/uploads/Franklin%20White%20Paper.pdf>. (As of January 2003)

There are a number of converging forces that will allow an improved and even more efficient interconnect between public safety operations and those management systems used by the traffic management community to address incident management and traffic congestion. These forces include Automatic Crash Notification and the everyday use of cell phones. ITS America is leading this effort by monitoring technology development and sponsoring initiatives to forge the bond with public safety as quickly as possible by working with the national public safety associations.

Public Safety Wireless Communications Standards Awareness Guide. Public Safety Wireless Network (PSWN) Program, A Joint Initiative of the Department of Justice (DOJ) and the Department of the Treasury, Washington, DC.

http://www.safecomprogram.gov/NR/rdonlyres/7FD5C8AA-D69E-4B88-B095-174646B5757F/0/standards_awareness_guide.pdf. (As of January 2002)

This guide advocates for the adoption and implementation of open standards to facilitate information sharing among public safety organizations, regardless of the equipment that is used by each organization. It describes several activities focused on voice/radio/wireless data standards, including Project 25, the European Telecommunications Standards Institute's Terrestrial Trunked Radio Access (TETRA), the State of Michigan, the PSWN program, and the Federal Law Enforcement Wireless Users Group (FLEWUG).

Public Transportation Emergency Support Capabilities (Worksheet). U.S. Department of Transportation (U.S.DOT), Federal Transit Administration (FTA), Washington, DC. (As of May 2003)

This 1-page worksheet provides a simple way for transit agencies to identify and communicate the resources they have available to support community response to emergency events. This sheet can be completed and submitted to local emergency planning agencies and public safety organizations.

Wallace, C. E. and J. N. Sparks. *Quick Clearance and 'Move-It' Best Practices, Executive Summary*. I-95 Corridor Coalition Coordinated Incident Management Program Track Committee, Project 9-3B, Springfield, VA.
http://www.i95coalition.net/i95/Portals/0/Public_Files/uploaded/Incident-toolkit/documents/Original%20QC%20Docs/QC-MI_PB_Exec_Summary.pdf. (As of June 2005)

The purpose of this project is to examine the quick clearance and Move It policies implemented in the I-95 Corridor and around the United States and to document the best practices found. There are a number of areas that can be examined such as the actual processes used by the cognizant agencies, the language of the enabling legislation, how institutional support was obtained, and how the public was educated about the new policies and/or laws. This executive summary provides an overview of recommended administrative, regulatory and statutory best practices, as well as an over-arching set of institutional recommendations to help focus continued member efforts towards more consistent incident management practices with resulting savings in lives, time and money.

Wallace, C. E., J. Sparks, J. O'Laughlin, and T. Smith. *Quick Clearance and 'Move-It' Best Practices—Final Report*. I-95 Corridor Coalition. College Park, MD.
http://www.i95coalition.net/i95/Portals/0/Public_Files/uploaded/Incident-toolkit/documents/Original%20QC%20Docs/I-95CC_QC-MI_PB_Final_Report.pdf. (As of February 2010)

This report compiled a number of “best practices” in Traffic Incident Management (TIM), specifically for Quick Clearance (QC) and Move-It laws. This work was closely coordinated with NCHRP Synthesis 318. Both reports and the executive Summary are available on the Web at.

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_318.pdf. June 24, 2008.

Quick Response Benefit/Cost Analysis Tool (QRBCAT)—User Guide. I-95 Corridor Coalition, Springfield, VA.
http://www.i95coalition.net/i95/Portals/0/Public_Files/pm/reports/full119.PDF. (As of February 2010)

The purpose of QRBCAT is to provide agencies with a simple, user-friendly, sketch planning level tool that will enable them to quickly assess the benefits of having an incident management program in place. The basic approach to evaluating the benefits is to compare existing conditions (with an enhanced incident management

program) with a *base* or *no-build* scenario (without the enhanced incident management program). Estimates of user delay, emissions, fuel consumption and costs are generated for the two scenarios. The incremental difference between the two scenarios is used to calculate a benefit/cost ratio. The tool provides default values and look-up tables for various input parameters. Users can, however, override the defaults with local, site-specific data wherever available.

Recommended Federal Grants Guidance—Public Safety Communications & Interoperability Grants. U.S. Department of Homeland Security (DHS), Washington, DC. http://www.safecomprogram.gov/NR/rdonlyres/55066F6A-A2FD-4285-AEDD-39F62EE04AAD/0/Recommended_Federal_Grants_Guidance_Public_Safety_Communications_Interoperability_Grants.pdf. (As of September 2003)

In line with the needs of public safety and the National Strategy, federal Fiscal Year 2003 Appropriations make available grant funding to improve the effectiveness of public safety communications systems and to resolve interoperability issues. By definition, communications interoperability refers to the ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems—to exchange voice and/or data with one another on demand, in real-time, when needed. The programs support the need to improve those systems so long as the improvement planning includes a vision for improved interoperability with other agencies.

Iserson, A. *Recovery and Mitigation for Transportation Management Centers, Final Draft Technical Document*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://tmcdfs.ops.fhwa.dot.gov/cfprojects/uploaded_files/rmtmc_finaldraft.pdf. (As of February 2007)

This document presents the issues involved with system outages in Transportation Management Centers (TMCs). It proceeds through defining system outages, gaining appropriate management support for the issues, cost/benefit for mitigation of system outages, preparing for a system outage, best practices, ongoing testing, and maintenance of the plan.

Chapters within the document include Recovery and Mitigation in the TMC, Synthesis of Current Practices, The Planning Project, Recovery and Mitigation Policies, Mitigation, Testing Preparedness, Ongoing Support for the Plan, and Summary including activity checklists.

Resource Management [Web site]. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://www.fema.gov/emergency/nims/FAQ.shtml#item2>. (As of January 2010)

NIMS-oriented resource management and mutual aid enhance incident readiness and response at all levels of government through a comprehensive and integrated system that allows jurisdictions to share resources among mutual aid partners. This site is intended to provide information and resources to enhance these processes.

Mulholland, D. J. *Reducing the Burden of Nonincident Traffic Calls Through 511*. The Police Chief, International Association of Chiefs of Police, Alexandria, VA.
<http://www.iacptechology.org/Library/TechTalk/TechTalk0202.pdf>. (As of February 2002)

This article describes the development of 511 and notes the benefits for the law enforcement community. Law enforcement can play a role in providing real-time data to the 511 informational databases. In addition, a law enforcement agency can use 511 information to help manage traffic conditions during traffic-related incidents, major events, or severe weather conditions. Partnerships with 511 programs will allow law enforcement to advise the traveling public of roadway congestion or unsafe conditions and suggest alternate routes with an eye toward reducing backups and secondary incidents.

Task Force on Homeland Security and Emergency Preparedness of the National Capital Region. *Regional Emergency Coordination Plan*. Metropolitan Washington Council of Governments, Washington, DC.

http://www.mwcog.org/security/security/download/RECP_final.pdf. (As of September 2002)

The Metropolitan Washington Council of Governments (COG) established the Task Force on Homeland Security and Emergency Preparedness for the National Capital Region following the attacks of September 11, 2001. The Task Force provided oversight for preparation of the Regional Emergency Coordination Plan (RECP). The RECP provides a framework for COG's member local governments, the State of Maryland and Commonwealth of Virginia, the federal government, public agencies, the private sector and volunteer organizations, and schools and universities to collaborate in planning, communication, information sharing, and coordination activities before, during, or after a regional emergency.

Regional Emergency Evacuation Transportation Coordination Annex. Metropolitan Washington Council of Governments, Washington, DC.

http://mwcog.org/security/security/download/RECP_evacuation_902.pdf. (As of September 2002)

The Evacuation Transportation Coordination Annex addresses primarily those regional incidents or emergencies that will require the information exchange and the decision-making resources designated in the RECP Framework to coordinate evacuation, shelter, and response efforts across functional and jurisdictional lines. The parameters and strategies described in the annex can be useful in a wide variety of incidents where there might be surge demands on the transportation system, the need for coordination among transportation agencies regarding road closures, network status, and similar issues, the need for coordination among decision-makers regarding employee- or school-release advisories or other demand strategies related to the nature of the emergency.

Regional Emergency Support Function (R-ESF) #1 Transportation. Metropolitan Washington Council of Governments, Washington, DC.

http://www.mwcog.org/security/security/download/RECP_1_902.pdf. (As of September

2002)

The Regional Emergency Support Function (R-ESF) #1—Transportation facilitates communication and coordination among regional jurisdictions and agencies concerning regional transportation issues and activities before, during and after a regional incident or a regional emergency.

Regional Traffic Incident Management Program Implementation Guide. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://ntl.bts.gov/lib/9000/9700/9740/5901.pdf>. (As of May 2001)

The purpose of this document is to assist organizations and their leaders in implementing and sustaining regional traffic incident management programs, both by examining successful models and by considering some of the lessons learned by early implementers. This document presents a framework for developing a formal, multiagency traffic incident management program, with endorsement by, participation from, and coordination by senior agency management. The guide also discusses the importance of program monitoring, evaluation and reporting, as well as the need for strategic planning throughout the process. The intended audience for this document is mid- and upper-level managers in police, fire, and emergency medical service departments, as well as transit and transportation agencies.

Regional Transportation Operations Collaboration and Coordination. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington DC. http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE/ITS1007.pdf. (As of 2003)

This primer was written for transportation professionals and public safety officials from cities, counties, and states that are responsible for day-to-day management and operations within a metropolitan region. It is intended to help agencies and organizations understand the importance of regional collaboration and coordination, how it happens, and how to get started.

Responding to Incidents of National Consequence: Recommendations for America's Fire and Emergency Services Based on the Events of September 11, 2001, and Other Similar Incidents. U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://www.usfa.fema.gov/downloads/pdf/publications/fa-282.pdf>. (As of May 2004)

The purpose of this report is to provide guidance to fire departments and emergency services across America to prepare for, respond to, and recover from major multi-jurisdictional local incidents that have national consequences and may involve national resources. The issues and recommendations in this report were identified in various after-action reports and interviews with the leaders of the organizations that responded to, participated in, and managed these events.

“Reverse-Laning” I-65 in Alabama for Hurricane Evacuations. Alabama Department of Transportation, Montgomery, AL. <http://san-antonio.tamu.edu/trbanb10->

3/Resources/Alabama_2003.pdf. (As of 2003)²

With the support of the Governor's Office, the ALDOT Transportation Director called for the preemptive development of a "Reverse-Laning" plan for Alabama in April 2000 to be ready for implementation that hurricane season.

Risk Assessment of Using Firefighter Protective Ensemble with Self-Contained Breathing Apparatus for Rescue Operations During a Terrorist Chemical Agent Incident. U.S. Department of the Army, United States Army Soldier and Biological Chemical Command (SBCCOM), Aberdeen Proving Ground, MD (As of August 2003)

This report provides the Incident Commander with an understanding of the protection afforded by standard firefighter protective ensembles (FFPE) and the associated risks involved if the ensemble is worn while performing rescue operations at the scene of a terrorist incident involving the use of military chemical warfare agents. This report supersedes the report titled "Guidelines for Incident Commander's Use of Firefighter Protective Ensemble (FFPE) with Self-Contained Breathing Apparatus (SCBA) for Rescue Operations During a Terrorist Chemical Agent Incident" dated August 1999.

National Infrastructure Protection Center. *Risk Management: An Essential Guide to Protecting Critical Assets.* Department of Homeland Security (DHS), Washington, DC. <http://www.iwar.org.uk/comsec/resources/risk/risk-mgmt.pdf>. (As of November 2002)

This guideline will help managers considering security reviews or risk assessments by providing guidance on how to review those assessments for thoroughness. It outlines a "Five Step Risk Assessment" model that includes: asset assessment; threat assessment; vulnerability assessment; risk assessment; and identification of countermeasure options.

Risk-Based Hurricane Recovery of Highway Signs, Signals and Lights. Virginia Center for Risk Management of Engineering Systems, University of Virginia Charlottesville, VA. http://www.virginia.edu/crmes/recovery/newdoc/VDEM_10-6-00.ppt. (As of October 2000)

The goal of the effort is to aid the Virginia Department of Transportation (VDOT) in planning and management for the hurricane recovery of highway signs, lights, and signals through assessment of the risks, costs, and benefits of alternatives.

Nelson, G. G., and P. Pisano. *Road Weather Sensing: Defining a National Infrastructure.* Mitretek Systems, Inc., Washington, DC. <http://www2.ceri.go.jp/sirwec2002/english/papers/nelson.pdf>. (As of 2001)

Observation of environmental conditions on and around the roadways is just one part of that infrastructure, but with important relations to the existing meteorological observation system. Even the meteorological observation system in the U.S. suffers from some fragmentation, but the fragmentation is even more serious for transportation surveillance deployed by numerous local jurisdictions and vendors.

This paper describes the vision of a national road-weather sensing infrastructure in the U.S., and the initial steps toward that vision.

Higgins, L., M. Hickman and C. Weatherby. *Role of Public Transportation Operations in Emergency Management: Research Report*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. <http://tti.tamu.edu/documents/1834-2.pdf>. (As of December 1999)

This document examines the possible roles that public transit agencies can fulfill in the emergency management plans of their cities and/or counties. The report summarizes the first two phases of the project, which incorporate a review of available literature on emergency and disaster management planning, a review of the state of the practice among transit agencies in Texas, an examination of the legal and institutional issues that affect emergency planning and response, and a summary of possible transit roles with jurisdictional emergency management plans.

Safe Positioning While Operating In or Near Moving Traffic. Cumberland Valley Volunteer Firemen's Association, respondersafety.com, Shippensburg, PA. (As of June 2003)

This procedure identifies parking practices for fire department apparatus and vehicles that will provide maximum protection and safety for personnel operating in or near moving vehicle traffic. The procedure covers terminology; benchmarks for safety, apparatus and emergency vehicles, incident command, and emergency crew personnel; and high-volume, limited access highway operations. This procedure also provides an officer safety parking "cue card" for on-scene use.

Jenkins, B. M. and F. E. Winslow. *Saving City Lifelines: Lessons Learned in the 9-11 Terrorist Attacks*. The Norman Y. Mineta International Institute for Surface Transportation Policy Studies (MTI), San Jose State University College of Business, San Jose, CA. <http://transweb.sjsu.edu/mtiportal/research/publications/documents/02-06.pdf>. (As of September 2003)

Saving City Lifelines: Lessons Learned in the 9-11 Terrorist Attacks is a case study of the 2001 events undertaken to determine what lessons could be preserved from the experiences of responding transit agencies used in planning response to future terrorist attacks or natural disasters. Due to the magnitude of damage to and involvement by the New York City transit agencies, the report focuses primarily on that city's experience. The systems that were affected directly or indirectly and the responding emergency agencies are addressed with regard to prior preparations, the immediate events on September 11, and subsequent alarms. The study includes crisis management, security, and restoration of service.

SCDMH All-Hazards Disaster Response Plan. Office of the Medical Director, South Carolina Department of Mental Health, Columbia, SC. <http://www.state.sc.us/dmh/disresmanual/diastermanual05.pdf>. (As of March 2004)

The purpose of the South Carolina DMH Disaster Recovery Plan is to provide a framework for the delivery of coordinated assistance to local mental health centers

and hospitals. This plan provides processes and procedures to use crisis counseling and other disaster-related services in time natural disaster or act of terrorism.

Turner, L., D. Wald, and K-W. Lin. *ShakeCast: Caltrans Deploys A Tool for Rapid Postearthquake Response*. TR News 261 March–April 2009.
<http://onlinepubs.trb.org/onlinepubs/trnews/trnews261RPO.pdf> (As of June 2009)

Caltrans initiated a research contract with the United States Geological Survey to develop and implement a Caltrans-specific version of Shake-Cast, a post-event software analysis tool. The goal was to change the way that Caltrans responds to a major earthquake. ShakeCast is a Web-based application that automatically retrieves measured earthquake shaking data and analyzes the data in relation to individual bridge performance characteristics. Within minutes of an event, the program generates e-mails to set priorities for inspection and assembles other Web-based products to assist emergency responders.

Shelter in Place at Your Office. National Institute for Chemical Studies, Charleston, WV.
<http://www.nicsinfo.org/sipcenter.asp>. Click on the link for Model Shelter-in-Place Plan for Businesses. (As of February 2003)

This guide is used for preparing a workplace shelter in place plan. The document outlines the basics steps involved in and items needed for creating a shelter in place; procedures; a sample Shelter in Place Plan; and a detailed checklist of items and procures.

Sheltering in Place as a Public Protective Action. National Institute for Chemical Studies, Charleston, WV. <http://www.nicsinfo.org/sipcenter.asp>. (As of June 2001)

The report chronicles four case studies where shelter in place was used as a protective action and provides a summary of additional occurrences. “Shelter in place” is defined as: “go indoors, close up the building and wait for the danger to pass”. Oak Ridge National Laboratory has defined four levels of sheltering: Normal; Expedient; Enhanced; and, Pressurized.

Simplified Guide to the Incident Command System for Transportation Professionals. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://ops.fhwa.dot.gov/publications/ics_guide/ics_guide.pdf. (As of February 2006)

The purpose of this Guide is to introduce the Incident Command System (ICS) to stakeholders who may be called upon to provide specific expertise, assistance, or material during highway incidents but who may be largely unfamiliar with ICS organization and operations. These stakeholders include professionals at transportation agencies, companies involved in towing and recovery, as well as elected officials and government agency managers at all levels.

South Carolina Earthquake Plan, Annex 1 (ESF-1)—Transportation. South Carolina Emergency Management Division, State of South Carolina, West Columbia, SC. [http://www.scemd.org/Plans/EQPlan07/Annex%201%20\(Transportation\).pdf](http://www.scemd.org/Plans/EQPlan07/Annex%201%20(Transportation).pdf). (As of July 2006)

ESF—1 coordinates the transportation assets needed and the infrastructure essential to support earthquake response and provides recommendations on the safety of the transportation infrastructure (roadways, waterways, and airports) within the disaster area.

South Carolina Hurricane Evacuation Plan 2002. South Carolina Department of Transportation (SCDOT), Columbia, DC. http://san-antonio.tamu.edu/trbanb10-3/Resources/SC_evacuation_planning__23-Feb-02_.pdf. (As of 2002)

This PowerPoint presentation describes the current strategies in place for South Carolina's Department of Transportation evacuation plan focusing on lane-reversal and ITS in-place and finalizing with their future needs. The presentation includes many photos and diagrams.

Stambaugh, H. and D. Sensenig. *Special Report: Fire Department Preparedness for Extreme Weather Emergencies and Natural Disasters.* U.S. Department of Homeland Security, (DHS), Federal Emergency Management Agency (FEMA), U.S. Fire Administration (USFA), Washington, DC. http://www.usfa.dhs.gov/downloads/pdf/publications/tr_162.pdf. (As of April 2008)

This report examines the impact of extreme weather and natural disasters on the fire service. It also addresses the types of service calls most likely to arise as a result of these disasters and what equipment and planning are needed in order to be prepared. Safety, mutual aid, shift management, resource identification, logistics, and other related issues are discussed, along with examples from case studies of fire departments that have learned from experience what can happen. The report provides information that fire departments can use to enhance their level of preparedness and ensure greater safety the next time disaster strikes.

Standards for Traffic Management Center to Center Communications—Volume 1: Concept of Operations and Requirements. American Association of State Highway and Transportation Officials (AASHTO) and Institute of Transportation Engineers (ITE), Washington, DC. http://www.ite.org/tmdd/Volume1_10-24-2003.pdf. (As of October 2003)

This publication provides the foundation of the Center-to-Center (C2C) Concept of Operations and Requirements for Advanced Traffic Management System (ATMS). It should be noted that the ATMS is a complex system and many other standards are necessary for development and center-to-center operations. This document, however, addresses the most fundamental elements of an ATMS.

Standards for Traffic Management Center to Center Communications—Volume II: Companion Annexes. American Association of State Highway and Transportation Officials (AASHTO) and Institute of Transportation Engineers (ITE), Washington, DC.

http://www.ite.org/tmdd/Volume3_10-24-03.pdf. (As of October 2003)

This companion document to Volume II of the Standards for Traffic Management Center-to-Center Communications includes the following annexes: Annex A—Message Sets: ASN.1 Representation; and, Annex B—TMDD Data Elements.

Standards for Traffic Management Center to Center Communications—Volume II: Message Sets. American Association of State Highway and Transportation Officials (AASHTO) and Institute of Transportation Engineers (ITE), Washington, DC.
http://www.ite.org/tmdd/Volume2_10-24-03.pdf. (As of October 2003)

This Volume II of Standards for Traffic Management Center-to-Center (C2C) Communications describes standardized medium-independent messages needed for External Traffic Management Center Communications (ETMCC). The messages contained in this volume address status and control functions for all supported operations described in Volume I—Concept of Operations and Requirements.

State and Local Interoperability Assistance Support—Statewide Strategy Best Practices Report. Public Safety Wireless Network (PSWN) Program, A Joint Initiative of the Department of Justice (DOJ) and the Department of the Treasury, Washington, DC.
http://www.safecomprogram.gov/NR/rdonlyres/85F84F34-36F8-40A0-A1D4-E71DFEA3F6DD/0/Statewide_Strategy_Best_Practices_Report.pdf. (As of March 2003)

The Public Safety Wireless Network (PSWN) Program recently completed interoperability assistance efforts in the states of Mississippi, Tennessee, and West Virginia. As part of this assistance, the program provided strategy-based assistance tailored to meet the unique needs of each state. This report captures the key findings of the strategic approaches used by each of these three states. Although this report only highlights the strategic approaches of Mississippi, Tennessee, and West Virginia, the actions, strategies, and best practices can be tailored for any state or region seeking to improve interoperable communications.

State and Local Mitigation Planning “How-To” Guides, Federal Emergency Management Agency. Washington, DC. <http://www.fema.gov/plan/mitplanning/resources.shtm>. (As of January 2010).

This series of "How-To" guides was designed to help states, tribes, and local governments understand mitigation planning and to provide information and tools that go beyond the basic requirements of 44 CFR Part 201. The guides focus on initiating and maintaining a planning process that will result in safer communities, and they are applicable to jurisdictions of all sizes and all resource and capability levels. The series is summarized as follows:

- Getting Started: Building Support for Mitigation Planning (FEMA 386-1)
- Understanding Your Risks: Identifying Hazards and Estimating Losses (FEMA 386-2)
- Developing the Mitigation Plan: Identifying Mitigation Actions and Implementing Strategies (FEMA 386-3)
- Bringing the Plan to Life: Implementing the Hazard Mitigation Plan (FEMA 386-4)
- Using Benefit-Cost Review in Mitigation Planning (FEMA 386-5)

- Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning (FEMA 386-6)
- Integrating Manmade Hazards into Mitigation Planning (FEMA 386-7)
- Multi-Jurisdictional Mitigation Planning (FEMA 386-8)

State of California Emergency Plan. State of California, Governor's Office of Emergency Services, Planning Section, Mather, CA.
[http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Plans%20and%20Publications/\\$file/CEP-05.pdf](http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Plans%20and%20Publications/$file/CEP-05.pdf). (As of September 2005)

This plan addresses mitigation, preparedness, response, and recovery activities. There are four parts to the State Emergency Plan:

- Part One is the basic plan, describing the hazards faced in California, the emergency management organization, the Standardized Emergency Management System (SEMS), emergency declarations, roles and responsibilities, and administrative practices. The basic plan is intended to be general in its application and provide for flexibility during response and recovery.
- Part Two consists of an overview of the organization for response and recovery operations, including state agencies and other organizations with lead and support responsibilities.
- Part Three is a listing of plans and documents that are identified as references to the state plan. Included are laws, regulations, orders, plans, training material, resource manuals, and agreements that support this plan. They provide additional detailed information for the conduct of emergency operations and performance of emergency duties. Examples of model ordinances and resolutions for city and county government, federal plans, and planning guidance material are also listed.
- Part Four contains a glossary of acronyms and definitions used in this plan.

State NIMS Integration: Integrating the National Incident Management System into State Emergency Operations Plans and Standard Operating Procedures, Version 1.0. U.S. Department of Homeland Security (DHS), Washington, DC.
http://www.fema.gov/pdf/nims/eop-sop_state_online.pdf. (As of 2007)

In a Sept. 8, 2004 letter to the nation's governors, the Secretary of Homeland Security outlined the minimum requirements for states and territories to comply with the new National Incident Management System (NIMS). The Office of Grants and Training and the NIMS Integration Center (NIC) are aware that many states across the country have already developed emergency operations plans and procedures. The purpose of this document is to outline several ways in which current plans and procedures can be modified to align with NIMS concepts and terminology. The five focus areas of this document include: the EOP's relation to other federal guidance, NIMS adoption, a checklist of Emergency Operations Plan components, NIMS definitions and acronyms, and the NIMS Incident Command System (ICS). Information is also included in this document about the National Mutual Aid and Resource Typing Initiative.

Statement of Requirements for Public Safety Wireless Communications & Interoperability: The SAFECOM Program —Department of Homeland Security. U.S. Department of Homeland Security (DHS), Washington, DC.
http://www.safecomprogram.gov/NR/rdonlyres/3FFFBFBA-DC53-440E-B2EF-ABD391F13075/0/SAFECOM_Statement_of_Requirements_v1.pdf. (As of March 2004)

The Statement of Requirements (SoR) for public safety communications and interoperability provides information on base level requirements for a system of interoperable public safety communications across all local, tribal, state, and federal *first responder* communications systems. SAFECOM's mission is to serve as the umbrella program within the federal government to help local, tribal, state, and federal public safety agencies improve public safety response through more effective and efficient interoperable wireless communications.

Statewide Mutual Aid Event Agreement. Commonwealth of Virginia, Virginia Department of Emergency Management (VDEM), Statewide Mutual Aid Committee, Richmond, VA.
http://www.vdem.state.va.us/programs/sma/forms/SMA_Event_Agreement.xls. (As of June 2001)

This document is an excerpt from the Statewide Mutual Aid Guidebook. Used in time of emergency, an Event Agreement can be quickly developed and consummated whereby the specific manpower and equipment resources to be provided and the terms and conditions of the assistance will be identified and officially agreed to by both Requesting Party and Assisting Party.

Statewide Mutual Aid for Emergency Management Model Authorizing Resolution. Commonwealth of Virginia, Virginia Department of Emergency Management (VDEM), Statewide Mutual Aid Committee, Richmond, VA.
<http://www.vdem.state.va.us/programs/sma/forms/MODEL%20AUTHORIZING%20%20RESOLUTION.doc>. (As of August 2006)

This document is an excerpt from the Statewide Mutual Aid Guidebook. Under the Model Authorizing Resolution cities and counties will sign-on to the concept of statewide mutual aid thereby agreeing to provide assistance when asked and if able to do so.

Beaulieu, P., and J. Marchand. *Strategic Planning Guide for the Evacuation of a Highly Urbanized Environment*. Government of Canada, Office of Critical Infrastructure Protection and Emergency Preparedness, Ottawa, ON.
<http://emc.ornl.gov/CSEPPweb/data/Evacuation%20Documents/%20Guidance%20Documents/canada-evacurban.pdf>. (As of 2002)

The primary purpose of this Guide is to demonstrate the need to be adequately prepared and equipped to make a decision about whether to evacuate, in whole or in part, a sector that is threatened by a disaster or that has already been hit by a disaster. The document sets out all the operations, tasks and functions to be addressed in making plans that will lead to consistent and optimal decisions taking account of the circumstances of a particular disaster. The guide specifies all the stages involved in preparing the information needed and the actions that must be undertaken in order to make an informed judgment on the situation and determine

whether an evacuation is necessary.

PB Farradyne. *Successful Traffic Signal System Procurement Techniques: A Summary of Effective Processes*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.

http://www.its.dot.gov/jpodocs/repts_te/13611.html. (As of January 2009)

Traffic signal systems are benefiting from the microcomputing and technology explosion of the past several decades. These new systems are more adaptable and more reliable than traffic signal systems of the past. However, these new technologies, and the capabilities enabled by them, introduce difficulties in procurement. Agencies are finding that these systems, equipment, and software do not meet their expectations for functionality and maintainability. In addition, it has become more difficult to manage the budget and schedule of a traffic signal system installation project. This document outlines a suggested procurement methodology that can support agencies in defining their signal systems needs and communicating those needs in procurement.

Science Applications International Corporation (SAIC). *Summary of Regional Hurricane Traffic Operations Workshops (Held January—February 2002)*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.itsdocs.fhwa.dot.gov/jpodocs/repts_te/13788_files/13788.pdf. (As of February 2002)

Three regional workshops, sponsored by FHWA were held in the southeastern United States to give representatives from transportation, law enforcement, and emergency response organizations the opportunity to exchange ideas on traffic operations during hurricane evacuations and recovery. The objectives of the workshops were to: (1) share updates on plans, ITS deployments, and institutional arrangements; (2) brainstorm simple solutions for improving traffic flow across jurisdictional boundaries; (3) work with agency representatives to plan and fund improvement projects (institutional, operational, technological); (4) develop next steps; and (5) share information about upcoming activities and conferences supportive of transportation operations (TRB, ITE, NHC, and others).

Supplemental Resource Guide to the National Incident Management System (NIMS) for Transportation Management Center Professionals. I-95 Corridor Coalition, College Park, MD.

http://www.i95coalition.net/i95/Portals/0/Public_Files/pm/reports/I95CC%20NIMS%20Guide%20-%2011-3B.pdf. (As of August 2008)

In February of 2006, the Federal Highway Administration released the *Simplified Guide to the Incident Command System for Transportation Professionals*. That guide provides an excellent overview of the National Incident Management System (NIMS) and what transportation agencies need to know to interact with other agencies in all levels of emergencies.

The I-95 Coalition has developed this guide to provide guidance geared specifically to

Transportation Management Center (TMC) operations. It is designed as a supplement to the Simplified Guide and Homeland Security's *National Incident Management System* document and has been condensed for ease of use by TMC personnel.

Pisano, P., L. Goodwin, and A. Stern. *Surface Transportation Safety and Operations: The Impacts of Weather within the Context of Climate Change*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://ops.fhwa.dot.gov/weather/best_practices/RWMP_Climate_Change_v3.pdf. (As of 2003)

This paper examines weather impacts on roadways, operational practices of transportation managers and road users, and the weather parameters with the greatest effects on roadways. Finally, a discussion of how possible climate change may affect these parameters during the next century is presented.

Florida Department of Transportation (FDOT). *Surface Transportation Security and Reliability Information System Model Deployment: Final System Requirements*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Office of Acquisition Management, Washington, DC. http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13962.html. (As of January 2009)

In March 2003, the Florida Department of Transportation (FDOT) was selected to participate in a highly innovative model deployment with the FHWA. Its goal was to provide an information infrastructure, more commonly referred to as the "Infostructure" model demonstration. The objective of the model deployment—called iFlorida—is to demonstrate the wide variety of operational functions that are enabled or enhanced by a surface transportation security and reliability information system. The model deployment will expand and integrate existing data collection and monitoring systems; collect and share data; use the data operationally to improve transportation system security, safety, reliability and performance; and where appropriate, distribute the data to the traveling public.

Pisano, P., and L. C. Goodwin. *Surface Transportation Weather Applications*. Institute of Transportation Engineers (ITE), Washington, DC. http://ops.fhwa.dot.gov/weather/best_practices/ITE2002_SurfTransWxAppl.pdf. (As of 2002)

Weather threatens surface transportation nationwide and impacts roadway mobility, safety, and productivity. Three types of mitigation measures—control, treatment, and advisory strategies—may be employed in response to weather threats. Road weather data sharing, analysis, and integration are critical to the development of better road weather management strategies. Environmental information serves as decision support to traffic, maintenance, and emergency managers; and allows motorists to cope with weather effects through trip deferrals, route detours, or driving behavior.

Surface Transportation Weather Decision Support Requirements: Operational Concept Description. Mitretek Systems, Inc., Washington, DC. <http://www.itsdocs.fhwa.dot.gov/jpodocs/EDLBrow/401!.pdf>. (As of July 2000)

This is a draft document for the Surface Transportation Weather Decision Support Requirements (STWDSR) project. The STWDSR project was conducted for the FHWA's Office of Transportation Operations (HOTO) Road Weather Management Program by Mitretek Systems, Inc. The STWDSR V1.0 document was delivered in January 2000, and gave background on the program and an initial needs analysis for decision support to winter road maintenance. Since then, two stakeholder meetings have refined the needs analysis and reviewed the initial operational concept for the Weather Information for Surface Transportation Decision Support System (WIST-DSS). The WIST-DSS is the conceptual system on which the STWDSR are levied, and the operation of which is described in this Operational Concept Description (OCD).

Surface Transportation Weather Decision Support Requirements: Preliminary Interface Requirements (PIR). Mitretek Systems, Inc., Washington, DC.
<http://www.itsdocs.fhwa.dot.gov/index.htm>. (As of October 2000)

This Preliminary Interface Requirements (PIR) is a draft document for the Surface Transportation Weather Decision Support Requirements (STWDSR) project. The STWDSR project is being conducted by Mitretek Systems, Inc., for the Federal Highway Administration (FHWA) Office of Transportation Operations (HOTO) Road Weather Management Program. The PIR complements the STWDSR Operational Concept Description (OCD) document, and both documents together constitute the STWDSR version 2.0 (V2.0) deliverable. The PIR defines requirements on the external information sources for the winter road maintenance decision support functions described in the OCD.

Transportation Research Board Committee A3C01. *Synopsis of WsDOT's Review of Highway Maintenance "Outsourcing" Experience*. Washington State Department of Transportation (WsDOT), Olympia, WA.
<http://www.wsdot.wa.gov/NR/rdonlyres/8C2B4EEC-8F37-49A8-BEF7-D59E21B5BFDF/0/outsourcing.pdf>. (As of 2004)

This paper gathers after-the-fact reviews of highway maintenance outsourcing performance from programs in five states and British Columbia. On inspection, cases are found where costs may have gone up instead of down, services deteriorated rather than improved, administrative and supervisory arrangements proved problematic, and contractor failures left states scrambling to provide services or caught in the distraction of litigation.

Balog, J. N., A. Boyd, and J. E. Caton, P. Bromley, et al. *TCRP Report 86 Surface Transportation Security Volume 7, Public Transportation Emergency Mobilization and Emergency Operations Guide*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2010)

This guide examines activities that may be taken by public transportation agencies working with their local communities to promote the early recognition of emergency events, expedite response to emergency events, establish multi-agency coordination, and ensure that public transportation resources are available to support the response to an emergency event.

McCormick Taylor Inc. *TCRP Report 86: Volume 9, NCHRP Report 525: Volume 9, Guidelines for Transportation Emergency Training Exercises*. Transportation Research Board, Washington, DC, 2006. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

This report is designed to assist transportation agencies in developing drills and exercises in alignment with the National Incident Management System. The report describes the process of emergency exercise development, implementation, and evaluation. In addition, the available literature and materials to support transportation agencies such as state departments of transportation, traffic management centers, and public transportation systems are described.

AECOM Consultant, Inc., Maier Consulting, Inc., and Peter Schauer Associates. *TCRP Report 86: Public Transportation Security, Volume 10, Hazard and Security Plan Workshop: Instructor Guide*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

The objective of this project was to develop a hazard and security planning template and to design training for developing security plans and integrating those plans into the routine of daily transit operations. Users of the TCRP Report 86 series will find that the products emphasize mitigation along with prevention, preparation, response, and recovery. The training course in this report is supplemented online with a downloadable template for a completed hazard and security plan. The CD-ROM includes those resources and more than 60 other documents organized in an electronic library.

Friedman, D. M., M. C. Moneteith, D. H. Kay, V. B. Coutts, et al. *TCRP Report 86 Surface Transportation Security Volume 11, Disruption Impact Estimating Tool—Transportation (DIETT): A Tool for Prioritizing High-Value Transportation Choke Points*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

DIETT provides a means to adapt two Microsoft products, Access, and Excel, for use in evaluating transportation choke points in a regional or state setting. The value of this electronic product rests in the adapted algorithms allowing a user to enter data about their transportation network, and be provided with a relative risk of TCP's for further evaluation, and for use in traffic planning situations for emergency purposes.

Parsons Brinckerhoff Quade & Douglas, Inc., SAIC, Inc., and Interactive Elements Inc. *TCRP Report 86: Volume 12, NCHRP Report 525: Volume 12, Making Transportation Tunnels Safe and Secure*. Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)

This report provides tunnel owners and operators with guidelines for protecting their tunnels to minimize the damage potential from extreme events so that, if damaged, the tunnels may be returned to full functionality in relatively short periods.

The report focuses on three kinds of transportation tunnels: highway, rail, and transit. Rail (which includes both passenger and freight) and transit tunnels are separate

categories. Rail tunnels are typically larger and can carry greater loads than transit tunnels. Transit lines are typically in urban areas, with smaller and shorter cars, slower speeds, shorter distances, and higher occupancies than passenger rail lines.

Coordinated Incident Management Program Track. *Technology Evaluation of Regional Probe-Based Traffic Monitoring and Wireless (Cellular-E911) Geolocation Technology For Incident Management*. I-95 Corridor Coalition, http://www.i95coalition.net/i95/Portals/0/Public_Files/pm/reports/full103.pdf. (As of March 2002)

This document summarizes the draft of the final report for Subtask 7.3C—Evaluate Expansion of the I-95 Corridor Coalition Project titled *Technology Evaluation of Regional Probe Based Surveillance and Wireless (Cellular -E911) for Incident Management Tracking*. The report compares and evaluates various technologies that are being considered for traffic monitoring and incident management within the project area—a 200 mile stretch of the I-95 Corridor from Virginia to Southern New Jersey. Its primary focus is to determine the feasibility and applicability of cellular location tracking technologies and toll tag based traffic monitoring systems.

Texas Department of Transportation Statewide Center-to-Center Software and Systems Integration. National Transportation Communications for ITS Protocol—NTCIP 9005 v01.09, Washington, DC. http://www.ntcip.org/library/documents/pdf/9005v0109a_txdot_c2c.pdf. (As of January 2003)

In 1999, the State of Texas initiated a project to link disparate traffic management centers located across the state. The project was initiated based on a need by the various transportation agencies to exchange real-time data about the state of the transportation system and a desire by these agencies to be able to allow some degree of shared device control. In order to ensure the long-term viability of the integration project, there was a strong desire to base the implementation of these features on the new ITS standards. However, the agency was also aware that the standards had yet to be proven in the field and that changes were likely to occur throughout the project timeframe.

The California Department of Transportation Response and Recovery Conference After Action Report. Comunique USA, Inc., Atlanta, GA. http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/Security_October_AAR_Final_Report.pdf. (As of November 2006)

During October of 2006, the California Department of Transportation (Caltrans) hosted two workshops on emergency response and recovery for transit managers, port authority managers, emergency managers, first responders and those responsible for national response assets. The goal of the lessons-learned lectures and tabletop exercises was to gauge the preparedness level of transit systems throughout the state, gauge the level of integration with the emergency preparedness and response apparatus, and to improve those preparedness, response and recovery systems. This report summarizes the successes and lessons learned during the coordination of the conference and the exercises, as well as corrective action

recommendations to aid in the design of future events. The report summarizes outstanding issues for both the transit and emergency management communities in California regarding transit safety, security and emergency preparedness and response.

The Changing Role and Needs of Local, Rural, and Volunteer Fire Departments in the Wildland-Urban Interface. National Volunteer Fire Council (NVFC), Washington, DC. http://www.nvfc.org/pdf/wildland_fire_report_03.pdf. (As of June 2003)

This report highlights the changing role and needs of these local firefighting forces with regard to wildland fire and recommends actions that will improve these local forces' ability to safely and effectively carry out their roles—particularly in the rapidly growing Wildland-Urban Interface. Rural, volunteer and other local fire departments are the nation's first line of defense against fire starts in the Wildland-Urban Interface (WUI) and surrounding landscapes. The ability of local firefighters to contain a fire incident through quick and efficient initial response can dramatically reduce large-scale wildfire impacts to the public and to the environment.

The Downtown Dallas Emergency Response Resource Manual, Downtown Emergency Response Planning Committee, Dallas, TX. <http://dallasalert.org/docs/DDERM.pdf>. (As of December 2002)

This manual outlines the emergency preparedness program developed by downtown stakeholders in Dallas, TX. It offers planning tools and response procedures developed jointly by first responders such as police, fire/rescue services, public works and public transportation, and the private sector, such as property owners/managers, security officers, and building engineers. The manual also includes best practices that downtown organizations have adapted, including the local public transportation agency, to reduce the degree of risk and increase response and recovery capabilities.

Franklin, R. *The Growing Synergism Between Traffic Management and Public Safety Operations.* Lockheed Martin Canada, Transportation Systems, Kanata, Ontario. http://www.trafficincident.org/papers/1999/990929_tm_pso.doc. (As of 1999)

While the impact of this increased information flow can be felt across any system such as transit, public works and potentially even a school bus fleet, the area that derives the most benefit is Public Safety -- police, fire and emergency medical. This paper addresses the benefits and hurdles of connecting the traffic management and Public Safety systems.

The Intelligent Road/Rail Information Server (IRRIS) [Web site]. Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA), Scott AFB, IL. <http://www.tea.army.mil/tools/irris.htm>. (As of January 2009)

This Web site provides numerous links to information about IRRIS. IRRIS technology integrates transportation logistics, real-time tracking, and infrastructure data into a single, secure application accessible through the Internet. With real-time and relevant information about road conditions, construction, incidents, and weather from more

than 150 worldwide data sets, IRRIS technology enables SDDCTEA to visualize assets and perform spatial queries and analysis, such as plume modeling to depict the effects of hazardous materials and/or explosives on any geographic area.

The National Strategy for the Physical Protection of Critical Infrastructures and Key Assets. The White House, Washington, DC.

http://www.dhs.gov/files/publications/publication_0017.shtm. (As of February 2003)

The National Strategy for the Physical Protection of Critical Infrastructures and Key Assets identifies a clear set of national goals and objectives and outlines the guiding principles that will underpin our efforts to secure the infrastructures and assets vital to our national security, governance, public health and safety, economy, and public confidence. This Strategy also provides a unifying organization and identifies specific initiatives to drive our near-term national protection priorities and inform the resource allocation process. Most importantly, it establishes a foundation for building and fostering the cooperative environment in which government, industry, and private citizens can carry out their respective protection responsibilities more effectively and efficiently.

Row, S. *The National Transportation Operations Coalition: Moving from Dialogue to Action.* Institute of Transportation Engineers (ITE) Journal, Washington DC.

http://findarticles.com/p/articles/mi_qa3734/is_200312/ai_n9316594. (As of January 2009)

This article, reprinted with permission from the ITE Journal, documents significant work since the 2001 National Summit on Transportation Operations to lay a foundation to move from dialogue to action in improving transportation operations. The article addresses institutional changes that have been implemented, tools that have been developed, and also describes how the name of the Coalition has been changed to the National Transportation Operations Coalition.

VanderWilden, P. and A.J. DeBlasio. *The New York-New Jersey-Connecticut Metropolitan Model Deployment Initiative: A Review of the Initial Negotiations Process.* U.S. Department of Transportation (U.S.DOT), Research and Special Programs Administration and Volpe National Transportation Systems Center, Washington, DC and Cambridge, MA. http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_PR/4309.pdf. (As of July 1998)

This report addresses the initial negotiations process at the NY/NJ/CT MDI. In April 1996, an MDI proposal was submitted by the Transportation Operations Coordinating Committee (TRANSCOM) in partnership with the New York State Department of Transportation (NYSDOT) and Lockheed Martin Federal Systems (LMFS). After the proposal was selected for funding, negotiations between the public sector team and LMFS were conducted for approximately 11 months. The parties were unable to resolve a number of major issues which resulted in the termination of negotiations on September 10, 1997.

The Pima Association of Governments 2030 Regional Transportation Plan Vision and Goals. The Pima Association of Governments, Tucson, AZ.
<http://www.pagnet.org/documents/RTP/RTP2030/RTP2030FullUpdateSeptember2006.pdf>. (As of June 2006)

Pima Association of Governments' (PAG) Regional Transportation Plan, known as the RTP, is a long-range vision of regional transportation solutions in response to the challenges created by current needs and continuing growth. The 2030 RTP includes regional transportation studies, programs, construction projects, and other activities such as transit operations. The public was engaged in a region-wide community dialogue about transportation and quality of life issues resulting in the creation of a Vision and set of 10 Goals to guide regional long-range transportation planning efforts. These were adopted by Regional Council in March 2003. A series of educational forums and workshops were held resulting in the creation of over 800 project ideas that responded to solutions suggested by the 2030 RTP Vision and Goals.

The Regional Transportation Plan (RTP) is a detailed, multi-modal long-range plan for future transportation investments throughout eastern Pima County. The current update of the RTP will result in a blueprint for investing public revenues in the region's roadways, bikeways, bus, pedestrian, rail and aviation systems through the year 2030. The 2030 RTP integrates the policies, land use implications, and transportation plans of local cities, towns, Pima County, transit agencies, and the state. The 2030 RTP also includes a financial plan component identifying funding needs and revenue sources available to implement the plan.

Balog, J. N., A. Boyd, and J. E. Caton. *The Public Transportation System Security and Emergency Preparedness Planning Guide.* U.S. Department of Transportation (U.S.DOT), Federal Transit Administration (FTA), Washington, DC. <http://transit-safety.volpe.dot.gov/publications/security/PlanningGuide.pdf>. (As of January 2003)

This guide was developed to support the activities of public transportation systems to plan for and respond to major security threats and emergencies. The guide identifies the challenges of security and preparedness in the public transportation industry. It provides guidance on developing a Security and Emergency Preparedness Program, evaluating current level of security and emergency preparedness, conducting a threat and vulnerability assessment, and managing threats. The guide also addresses training and exercising in heightened threat conditions and explains available design strategies and technologies to support improved security and to enhance normal and emergency operations.

Transportation Research Circular E-C057: The Roadway INFOstructure —What? Why? How? Providing for Integrated Information to Roadway System Managers and Users. Transportation Research Board, Washington, DC.
<http://trb.org/publications/circulars/ec057.pdf>. (As of November 2003)

Exploring and evolving the vision was the topic of a two-day workshop, "The Roadway INFOstructure: Why? What? How?" sponsored by TRB's Committee on Intelligent Transportation Systems, ITS America, and the California Department of Transportation (Caltrans) held on August 21–23, 2002. In brief, the objective of the

workshop was to develop a shared (and shareable) understanding of the purpose of the Roadway INFOstructure and to explore such critical issues as: How the Roadway INFOstructure should be developed and operated; data ownership and privacy; addressing transportation data needs through the INFOstructure; addressing transportation security needs through the INFOstructure; opportunities and requirements for performance and information security; and technical, institutional, financial, and policy challenges.

Rubin, C. B. and I. Renda-Tanali. *The Terrorist Attacks on Sept. 11, 2001: Immediate Impacts and Their Ramifications for Federal Emergency Management*. Natural Hazards Research & Applications Center (NHR AIC) Quick Response Research Project, Boulder, CO. <http://www.colorado.edu/hazards/research/qr/qr140/qr140.html>. (As of January 2009)

The violent terrorist events of September 11, 2001 are reviewed and the early impact and ramifications of the after-effects are discussed. The primary focus of this report is emergency management at the federal level. This report offers time-line specific actions that were taken by the President, the Environmental Protection Agency (EPA), the Coast Guard, and local federal regional offices. The myriad impacts of the events such as financial and economic loss; loss of equipment, infrastructure, human productivity, and tourism; the interruption of business and the impact on the airline industry are outlined. Dramatic changes to political structure, attitudes and philosophy of the Federal Government regarding emergency management and counter-terrorism have resulted and are documented.

The Virginia "Interim" Abbreviated Transportation Model for Hurricane Evacuation. Virginia Department of Emergency Management (VDEM), Arlington, VA. http://san-antonio.tamu.edu/trbanb10-3/Resources/Virginia_2003.pdf. (As of 2003)

This document describes the abbreviated transportation model, a clearance time model, used in Virginia hurricane evacuation planning. The use of a clearance time model allows a nontraffic planner to understand the development process and application of the model. The model uses census data to predict the result of a phased evacuation in the Hampton Roads area of Virginia. The model works by calculating clearance time values at critical roadway segments.

Wolshon, B., G. Jacquemart, L. Hagen, D. Noyce, et al. *Toolbox on Intersection Safety and Design*, Institute of Transportation Engineers (ITE), ITE 2004 Technical Conference and Exhibit, *Intersection Safety: Achieving Solutions Through Partnerships*, Irvine, CA. <http://www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=CD-023>. . As of January 2009)

Chapter 1 focuses primarily on at-grade intersections in urban and suburban areas, summarizing the general principles of intersection design and highlighting the application of techniques and practices that increase the safety and efficiency of intersection operations. Chapter 2 explains the basic principles of roundabouts, their key design elements and safety aspects. Chapter 3 focuses on traffic control devices. These various types of devices, in combination with other roadway features, help users of the roadway system to safely coexist with other roadway users. Chapter 4 presents design and safety information pertaining to the non-vehicle users of

intersections, namely pedestrians, bicyclists, and other nontraditional users. Chapter 5 describes methods to collect, organize, and integrate crash data, this chapter will demonstrate a top-down analytical approach that empowers safety engineers and analysts to proactively identify specific intersection safety problems rather than respond to citizen complaints. Chapter 6 discusses traffic signal operations including installations to solve individual intersection problems without an awareness of the system-wide consequences of such decisions.

Top Officials (TOPOFF) Exercise Series: TOPOFF 2—After Action Summary Report for Public Release. U.S. Department of Homeland Security (DHS), Washington, DC.
http://www.armymars.net/ArmyMARS/EmergencyOps/Resources/TOPOFF2_Report_Final_Public.PDF. (As of December 2003)

This Summary Report highlights the significant findings of the TOPOFF 2 exercise series with particular focus on seven special topics that crossed multiple areas of analysis or were of special significance. The special topics are: Alerts and Alerting; Declarations and Proclamations; the role of federal officials; data collections and coordination; play involving the Strategic National Stockpile; communication and information sharing; and balancing the Safety of First Responders and the Rescue Victims.

TR News: All Hazards Preparedness, Response, and Recovery. Transportation Research Board, TR News Issue Number 250, Washington, DC.
<http://onlinepubs.trb.org/onlinepubs/trnews/trnews250.pdf>. (As of May-June 2007)

The May–June 2007 issue of TR News includes the following articles:

- Improving Disaster Preparedness and Response Through Practice-Oriented Research
- Capabilities-Based Planning for the National Preparedness System
- Restoring the National Response System: Fixing the Flaws Exposed by Hurricane Katrina
- Conceptualizing and Measuring Resilience: A Key to Disaster Loss Reduction
- The Prague Subway's New Flood Protection System: Lessons from the Disaster of 2002
- Sea-Based Emergency Response Planning: A Proven but Overlooked Strategy
- Risk Management for Multimodal Transportation Infrastructure: Interactive Tool Nears Completion
- Tools for Improving Evacuations: Federal Highway Administration Develops Primers and Training

Goldblatt, R. B. and L. Weinisch. *TR News: Evacuation Planning, Human Factors, and Traffic Engineering: Developing Systems for Training and Effective Response.* Transportation Research Board, TR News Issue Number 238, Washington, DC.
<http://onlinepubs.trb.org/Onlinepubs/trnews/trnews238evacplanning.pdf>. (As of May-June 2005)

This story in the May–June 2005 issue of the TR News examines evacuation planning. A real-time emergency planning system, the authors point out, could

generate evacuation routing and traffic management plans in response to accidents, terrorist attacks, or other catastrophic events that change the capacity or the topology of the road network and could serve as a training simulator for emergency planning.

North Carolina Department of Transportation, North Carolina State University. *Traffic Analysis of North Carolina's I-40 Lane Reversal Plan*. Transportation Research Board, Washington, DC. http://san-antonio.tamu.edu/trbanb10-3/Williams_Presentation_2004.pdf. (As of January 2004)

This document, released by the North Carolina Department of Transportation, provides an analysis of North Carolina's I-40 Lane Reversal Plan. The document presents information regarding the plan, tasks required, including modeling efforts, and proposed questions about implementation. The document illustrates storm history and specific storm paths that have affected transportation in North Carolina. Hurricane Floyd, the motivation behind the plan is also explored.

Traffic Incident Management Committee [Web site]. Traffic Incident Management Committee, Institute of Transportation Engineers (ITE), Washington, DC. <http://www.trafficincident.org/> (As of January 2009)

The Traffic Incident Management Committee involves a national group of professionals from the transportation and public safety community committed to the effective implementation and support of local traffic incident management programs. This Web site offers pertinent papers, presentations, meeting details and a discussion forum.

Traffic Incident Management (TIM) Self-Assessment: National Executive Summary Report. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://ops.fhwa.dot.gov/eto_tim_pse/docs/09timsaguide/index.htm. (As of January 2010)

The TIM Self Assessment tool is used by state and regional program managers to assess their achievement of a successful multi-agency program to manage traffic incidents effectively and safely. The tool also provides a method to assess gaps and needs in existing multi-agency regional and statewide efforts to mitigate congestion caused by traffic incidents. The TIM Self-Assessment consists of a series of questions designed to allow those with traffic incident management responsibilities to rate their performance in specific organizational and procedural categories. The ratings are then tallied to provide an overall TIM score for the program. The results of the TIM Self Assessments, as summarized in this Executive Summary will be used by FHWA to determine gaps nationally that need attention and to direct future years' FHWA program initiatives for traffic incident management.

PB Farradyne. *Traffic Incident Management Handbook*, U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://ops.fhwa.dot.gov/eto_tim_pse/faq/hand.htm (As of November 2000)

This handbook, a revision of the Freeway Incident Management Handbook (1991), updates and expands material contained in the old handbook. This document is

divided into three main sections: Introduction to Incident Management; Organizing, Planning, and Designing an Incident Management Program; and Operational and Technical Approaches to Improving the Incident Management Process. This handbook is designed to assist transportation and public safety agencies responsible for managing traffic incidents in improving their programs and operations. Its target audiences are (1) managers who are responsible for traffic incident management program development and support, and (2) field practitioners who are responsible for providing program services on a day-to-day basis.

An update to this handbook is under way as of this writing.

Corbin, J., and P. B. Noyes. *Traffic Incident Management Planning: The Case for Mainstreaming*, Institute of Transportation Engineers (ITE) Journal, Vol. 73, No. 2. http://www.trafficincident.org/papers/2003/0302_timmainstream.pdf. (As of February 2003)

Effective traffic incident management requires a comprehensive, integrated planning process that involves all potentially affected stakeholders who play a role in incidents and emergencies on highways. This article discusses the further development and implementation of traffic incident management by making it a priority in planning efforts and in road construction and maintenance projects. Opportunities for mainstreaming include statewide planning, regional planning, local and agency-level planning, capital projects, and corridor operations plans.

Traffic Incident Management Program: Major Program Initiatives [Web site]. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://ops.fhwa.dot.gov/eto_tim_pse/about/tim.htm. (As of January 2010)

The National Traffic Incident Management Coalition (NTIMC) is an assembly of national organizations representing the public safety, transportation, and towing and recovery communities. This website provides information on program incentives and current news. The website also provides a link to the FHWA's "Simplified Guide to the Incident Command System for Transportation Professionals". This document describes the Incident Command System (ICS) in the context of its application to highway incidents and also discusses the broader relationship to the National Incident Management System (NIMS).

Incident Management Coordination Team. *Traffic Incident Management Recommended Operational Guidelines*. Minnesota Department of Transportation (MnDOT), St. Paul, MN. <http://www.dot.state.mn.us/tmc/documents/Freeway%20Incident%20Management.pdf>. (As of March 2002)

The Incident Management Coordination Team (IMCT) has put together this document as a guideline for agencies to use when responding to traffic incidents on the Metro Area freeway system. The purpose of this document is to provide incident responders with uniform guidelines for safe operations at the scene of an incident. These guidelines are the result of numerous debriefings and discussions on how to improve the overall traffic incident management process. It is intended that this documents

serve as a guideline for decision making and can be modified by the incident responders as necessary to address existing incident conditions.

Highway Safety Committee. *Traffic Safety in the New Millennium: Strategies for Law Enforcement*. International Association of Chiefs of Police (IACP), Alexandria, VA. <http://www.nhtsa.gov/people/injury/enforce/TrafficSafety.pdf>. (As of October 2001)

This document addresses elements and core components in human resources, management and technology issues, with a focus on effective traffic safety strategies. These individual strategies discuss background information, possible actions, benefits, and other considerations. The information contained in this document deals with both proven strategies and promising initiatives for the future.

Battelle, TotalSecurity.US, and Transportation Resources Associates (TRA). *Transit Agency Security and Emergency Management Protective Measures*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FTA), Washington, DC. <http://transit-safety.volpe.dot.gov/publications/security/ProtectiveMeasures/PDF/ProtectiveMeasures.pdf>. (As of November 2006)

This document has been developed by the Federal Transit Administration, in consultation with the Department of Homeland Security's (DHS's) Transportation Security Administration and Office of Grants and Training and the American Public Transportation Association. *It replaces the prior document titled, Federal Transit Administration Transit Threat Level Response Recommendation*. This document provides a more comprehensive systems approach and framework for a transit agency to use in integrating its entire security and emergency management programs with the DHS Homeland Security Advisory System's five color-coded graduated threat conditions. In addition, this document provides protective measures to be implemented in the event of an Attack or Active Incident and during the Recovery phase following an incident.

Transit Watch Toolkit Fact Sheet. U.S. Department of Transportation (U.S.DOT), Federal Transit Administration (FTA), Washington, DC. <http://transit-safety.volpe.dot.gov/security/TransitWatch/toolkit2003.asp>. (As of January 2009)

Similar to the highly successful nationwide Neighborhood Watch crime prevention program implemented by the National Sheriff's Association in the early 1970s, Transit Watch is intended to raise the awareness of transit employees, riders, and the general public. The campaign was also designed to help foster the role of transit as a safe haven in communities across the country. Transit agencies are encouraged to embrace the Transit Watch initiative by adapting the program to meet the needs of their community, and to use this program to initiate or strengthen their agency's safety and security public awareness efforts.

Cambridge Systematics, Inc. and Parsons Brinckerhoff Quade & Douglas, Inc. *Transportation Asset Management Guide*. National Cooperative Highway Research Program (NCHRP) Project 20-24(11), Transportation Research Board (TRB) and The

American Association of State Highway and Transportation Officials (AASHTO), Washington, DC. <http://downloads.transportation.org/amguide.pdf>. (As of November 2002)

This study interprets transportation asset management as a “strategic approach to managing physical transportation infrastructure.” Transportation asset management in this context promotes more effective resource allocation and use based upon quality information. The objectives of this study have been to gather information on asset management practices in the United States and overseas, develop a framework for transportation asset management, and apply this framework to produce a Transportation Asset Management Guide. This Guide builds on this earlier work to provide state DOTs and other transportation agencies guidance on implementing asset management concepts and principles within their business processes.

Bloom, M. *Transportation Asset Management: An Introductory Briefing*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Office of Asset Management, Washington, DC. (As of May 2000)

This PowerPoint presentation easily interprets the scope of asset management including a definition of asset management; and its importance. It identifies the broad range of assets to be included and the driving trends behind asset management as well as three workshops on asset management available from AASHTO and FHWA.

Transportation Biohazard Operational Concept: Application of Technology to Transportation Operations in Biohazard Situations. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.trb.org/news/blurb_detail.asp?id=7531. (As of January 2009)

In 2004 and 2005, the FHWA and the Intelligent Transportation Systems Joint Program Office (ITS-JPO) conducted a project called *Application of Technology to Transportation Operations in Biohazard Situations*. The goal of this project was to develop a more comprehensive and actionable understanding of the role of transportation during a biohazard emergency so that communities across the country can better plan for, respond to, and recover from such an incident.

This document was prepared as part of that project. It builds on the results of an extensive literature review, a dedicated program of outreach with members of the affected transportation, emergency management, public health and public safety communities, and a validation workshop conducted in July 2005 and sponsored by the Wisconsin Department of Transportation. This operational concept was used to develop a set of recommended practices and a learning tool for state DOTs. The operational concept was also presented to the National Intelligent Transportation System (ITS) Architecture Team for consideration in defining additional functional requirements and user service agreements.

Transportation Emergency Response Checklist. Institute of Transportation Engineers (ITE), Washington, DC. http://www.ite.org/security/emerg_response_check.pdf. (As of 2009).

This two page document provides a comprehensive checklist of items focused on:

Emergency Transportation Plans; Inter-jurisdictional and Intermodal Cooperation; Training and Preparedness; and the Transportation System.

Transportation for Emergency Response and Recovery. Institute of Transportation Engineers (ITE), Washington, DC. http://www.ite.org/security/ITE_emerg_response.ppt. . (As of February 2004)

This ITE and FHWA developed slideshow provides an overview of the role of transportation professionals in the effective response to and recovery from a disaster.

Edwards and Kelcey, Inc. *Transportation Incident and Event Management Plan*. Delaware Department of Transportation, Dover, DE. <http://deldot.gov/information/projects/tmt/pdfs/TIEMP.pdf>. (As of February 2003)

This document has three stated purposes. The first is to define communication, response, resource, and responsibility procedures and guidelines of the Transportation Management Teams (TMT) for response to any incident that impacts the transportation system. The second is to establish the TMT concept that will maximize the safe movement of persons and vehicles from the affected area(s) and give emergency personnel access to the affected area(s). The third is to establish the TMT's responsibility for the prompt, safe, and orderly re-entry of evacuees into an evacuated area one the indent of event no longer exists.

Transportation Security; Emergency Response and Recovery. Transportation Research Record No. 2022, Transportation Research Board, Washington, DC. Search for title at <http://www.trb.org/SecurityPubs>. (As of January 2009)f

TRB's Transportation Research Record: Journal of the Transportation Research Board, No. 2022 includes 11 papers that explore emergency resource allocation for critical transportation infrastructure protection, intelligent transportation system networks survivability, information sharing during emergency response and recovery, multiple hazards protective measures, and the spatiotemporal model for infrastructure reconstruction following a large-scale disaster. This issue of the TRR also examines routing hurricane disaster relief goods, the impact of road capacity constraints on the spatial distribution of hurricane evacuation shelter capacities, a stochastic humanitarian inventory control model for disaster planning, emergency logistics issues affecting the response to Hurricane Katrina, designing emergency evacuation plans, and modeling the hurricane evacuation response curve. (The foregoing synopsis is quoted verbatim from TRB's Web site.)

One paper (TRR 2022, pages 76-82), "Emergency Logistics Issues Affecting the Response to Katrina—A Synthesis and Preliminary Suggestions for Improvement," provides a critical assessment of the logistical and related failures following Hurricane Katrina, and proposes improvements for the future.

Imel, K.J., and J.W Hart. *Understanding Wireless Communications in Public Safety: A Guidebook to Technology, Issues, Planning, and Management*. U.S. Department of Justice (USDOJ), National Institute of Justice (NIJ), The National Law Enforcement and Corrections Technology Center (NLECTC), Denver, CO.

http://www.safecomprogram.gov/SAFECON/library/systems/1052_UnderstandingWireless.htm. (As of January 2003)

The National Law Enforcement and Corrections Technology Center (NLECTC) system was conceived with the idea of helping public safety personnel understand and use new technology. In keeping with that goal, NLECTC–Rocky Mountain developed this guidebook to help unravel the confusing issues, terms, and options surrounding wireless communications, particularly as it involves commercially available communications services. The target audience consists of those middle and upper managers who are responsible for funding and/or managing communications at their agencies, but who have little or no technical background in wireless technology.

Understanding Your Risks, Identifying Hazards and Estimating Losses. U.S. Department of Homeland Security, (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. <http://www.fema.gov/library/viewRecord.do?id=1880>. (As of January 2010)

The second guide in the State and Local Mitigation Planning How-To Series provides step-by-step guidance on how to accomplish a risk assessment. Through a series of general and hazard-specific guidance and worksheets, the guide will help States, Tribes, and communities to determine 1) which natural hazards could affect a jurisdiction; 2) what areas of the jurisdiction are vulnerable to the hazards; 3) what assets will be affected; and 4) to what degree they will be affected, as measured through dollar losses. The guide is multi-hazard in scope, addressing flood, earthquake, tsunami, tornado, coastal storm, landslide and wildfire. For communities dealing with multiple hazards, guidance is also provided on how to develop a composite loss estimate. Once the risk assessment is completed, States and communities will have the information necessary to develop a strategy and plan for reducing their losses.

Unified Facilities Criteria (UFC)—Design and O&M: Mass Notification Systems. U.S. Department of Defense (DOD), Washington, DC. http://www.wbdg.org/ccb/DOD/UFC/ufc_4_021_01.pdf. (As of January 2010)

DOD components are required to provide mass notification capability for most new and renovated buildings per UFC 4-010-01, DOD Minimum Antiterrorism Standards for Buildings. Mass notification is defined as the capability to provide real-time information to building occupants during emergency situations. The ability to quickly and reliably notify building occupants of threats, and to tell them what is to be done in response to those threats, will reduce the risk of mass casualties. The new UFC 4-021-01 provides criteria for reliable, economical voice notification systems. These same criteria would be appropriate for use in any governmental or commercial project where emergency notification capability is needed.

Unit 2: The ICS Organization. (Excerpt from “*Independent Study Course: Incident Command System*”). U.S. Department of Homeland Security, (DHS), Federal Emergency Management Agency (FEMA), Washington, DC. (As of January 1998)

This is the definitive guide prepared by FEMA to teach ICS principles and concepts to

a wide range of emergency planners, responders and other organizations. It contains worksheets and checklists to reinforce guide lessons and ICS concepts. This guide explains how transit personnel can develop the ICS organization, transfer command, use the incident briefing form, and set objectives for the incident action plan. The guide also addresses incident facilities (locating and equipping the command post and establishing staging areas), resource management and assigning incident responsibilities. Appendices contain a glossary of terms and a set of relevant incident management forms that can be tailored for each individual responding agency.

Urban Search and Rescue in the Santa Cruz Area Following the Loma Prieta Earthquake. Federal Emergency Management Agency (FEMA), United States Fire Administration, Washington, DC.
<http://www.usfa.dhs.gov/downloads/pdf/publications/fa-124.pdf>. (As of November 1992)

This document was prepared to examine the lessons learned by three communities in the Santa Clara and Santa Cruz Counties area during the Loma Prieta Earthquake. To examine the earthquake and the responses to it requires the introduction of background information which goes beyond these three geographic areas. This report begins with an overview of the earthquake and its consequences, and a brief description of the regional and state organization and plans for responding to major emergencies. The individual communities and their responses to this emergency are then described along with the lessons learned.

Using Highways During Evacuation Operations for Events with Advance Notice: Routes to Effective Evacuation Planning Primer Series. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.
http://ops.fhwa.dot.gov/publications/evac_primer/primer.pdf. (As of December 2006)

This primer provides ideas and considerations for transportation officials and emergency managers that are applicable across the scale of evacuation events. The contents are based on the findings from numerous studies following major or catastrophic events where evacuations were ordered. The primer identifies best practices and lessons learned from these studies and captures proven formulas for successful use of the transportation network during emergency operations. It also identifies transportation technologies and tools available to aid evacuation planners and operations staff in their attempts to make maximum use of the transportation network during emergencies. In addition, the primer demonstrates ways to develop better evacuation plans through integration of transportation professionals in the process. Concepts identified in the primer series are applicable when dealing with small and large evacuation events.

Using Highways During Evacuation Operations for No-Notice: Routes to Effective Evacuation Planning Primer Series. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.
http://www.ops.fhwa.dot.gov/publications/evac_primer_nn/primer.pdf. (As of November 2007)

This document constitutes the first of a primer series titled *Routes to Effective Evacuation Planning* and covers the use of the highway system during evacuation

operations when advance planning is possible. The primer series, as a whole, captures and catalogues transportation management and operations advancements that can improve evacuation planning and operations. As experience in conducting evacuations increases and the concept of disaster support evolves, these primers may undergo adjustment based on new information, findings, lessons learned, best practices, and tools that local jurisdictions and states use and share.

Franzese, O., and L. Han. Oak Ridge National Laboratory, National Transportation Research Center (NTRC). *Using Traffic Simulation for Emergency and Disaster Evacuation Planning*. Presented at the 81st Annual Meeting of the Transportation Research Board, Washington, DC.
<http://onlinepubs.trb.org/Onlinepubs/am/presentations/Session247Franseze.pdf>. (As of January 2002)

Oak Ridge National Laboratory (ORNL) has developed a sophisticated simulation modeling system (named OREMS) that can be used to estimate evacuation time and to develop evacuation plans for different events or scenarios (e.g., good vs. bad weather conditions, day vs. nighttime evacuations) for user-defined spatial boundaries. The system permits to experiment with alternate routes, destinations, traffic control and management strategies, and evacuee response rates. For every scenario it is possible to identify evacuation or clearance times, traffic operational characteristics (e.g., average evacuation speed), bottlenecks, and other information necessary to develop effective evacuation plans and to conduct transportation infrastructure vulnerability studies.

Ventura County Operational Area Tsunami Evacuation Plan. Ventura County Sheriff's Office of Emergency Services, Ventura, CA (As of August 2006)

This document is designed to be a tsunami response plan for the coastal areas in Ventura County, which are susceptible to tsunamis. The Ventura County plan is potentially triggered by both locally generated and televised warnings of tsunamis. This plan is primarily intended for use during events occurring more than two hours travel time from Ventura. It contains a list of jurisdictions & facilities that are potentially affected, warning & communications systems, a concept of operations, a discussion of mass transit support for evacuations, shelter & assembly areas, a text-only discussion of evacuation routes, and evacuation maps/handouts.

Virginia DOT Statewide VMS Project. National Transportation Communications for ITS Protocol—NTCIP 9002 Amendment 1 v07, Washington, DC.
http://www.ntcip.org/library/documents/pdf/9002amend1v0107_vdot_dms.pdf. (As of January 2003)

The initial deployment of NTCIP-conformant equipment by the Virginia Department of Transportation (VDOT) was documented in a case study of its Variable Message Sign (VMS) implementation in NTCIP-9002 Version 01.04, dated September 03, 1999. Now that some time has elapsed since that initial effort, AASHTO, FHWA, ITE, and NEMA is sponsoring this case study update. This effort, presented as a case study amendment, focuses on insights gained over the three years of deployment since the initial case study was performed. Specifically, this amendment will address Agency

issues concerning current implementation efforts and their needs based upon experience gained through NTCIP deployment experience.

Cambridge Systematics, Inc. and Mitretek Systems, Inc. *Weather in the Infostructure*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Office of Operations, Washington, DC.
http://ops.fhwa.dot.gov/weather/best_practices/WeatherInInfostructure2003.pdf. (As of February 2003)

This paper addresses the Weather Response component of the Infostructure. Its primary purpose is to discuss the fundamental data needs of the weather Infostructure component, and to estimate an aggregate cost for national deployment of road weather data collection systems. It does this by first documenting a methodology for determining the number of Road Weather Information System (RWIS) sensors needed across the country to support basic road weather needs, and then documenting a methodology for determining the cost.

Cambridge Systematics, Inc. *Weather-Responsive Traffic Management Concept of Operations*. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC.
http://ops.fhwa.dot.gov/Weather/best_practices/WeatherConOps0103.pdf. (As of January 2003)

This paper provides a concise summary of a concept of operations and associated research needs pertaining to weather-responsive transportation management. Its primary focus is on the needs and activities of freeway and arterial transportation managers, and how these needs change or differ during adverse weather. The critical elements of the concept of operations activity flow are: basic operational objectives; information gathering and impact assessment; operational strategies; transportation outcomes. The document describes each of these elements with a focus on the information required and resources need to successfully develop and implement the concept of operations.

What's Yours, Mine and Ours: Overcoming Intellectual Property Rights Issues—A Cross-Cutting Study. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA) Intelligent Transportation System, Washington, DC.
<http://ntl.bts.gov/lib/9000/9700/9727/8v201.pdf>. (As of August 2000)

This document is one in a series of products designed to help you provide ITS solutions that meet your local and regional transportation needs. When the private sector brings software or technology to an ITS test or model deployment and the software is further enhanced during that test or deployment, issues of intellectual property rights often arise. Is there a way to easily address the assignment of these rights?

Holdeman, E. White Paper: Regional Transportation Disaster Recovery Planning. ICF International, Fairfax, VA.. (As of 2007)

This white paper raises the issue that transportation is the key critical infrastructure that needs to be the number one priority for being restored immediately following a disaster.

National Task Force on Interoperability, *Why Can't We Talk? Working Together to Bridge the Communications Gap to Save Lives: A Guide for Public Officials*. National Institute of Justice (NIJ), Advanced Generation of Interoperability for Law Enforcement (AGILE) Program, Washington, DC. <http://www.ncjrs.gov/pdffiles1/nij/204348.pdf>. (As of February 2003)

This publication was developed as a result of the ongoing dialogue among state and local elected and appointed officials and public safety officials. In this guide, these types of officials are referred to collectively as "public officials." Public officials include elected and appointed officials at every level of government, working to serve the public in a variety of roles, such as governors, mayors, state legislators, city and county council members, city and county managers, police chiefs, fire chiefs, sheriffs, chief information officers, and chief communications officers. It is hoped that this guide will serve as a catalyst for public officials to begin other, continuing dialogues with public officials in their localities, regions, and states to develop collaborative solutions.

Wireless Primer for CIOs. Public Safety Wireless Network (PSWN) Program, A Joint Initiative of the Department of Justice (DOJ) and the Department of the Treasury, Washington, DC. http://www.safecomprogram.gov/NR/rdonlyres/86C6C3BD-600E-4096-AB8A-B056A5A75971/0/Managing_Wireless_Networks_Primer.pdf. (As of 2001)

This document focuses on the land mobile radio (LMR) system standards development process. It describes the current state of affairs and the rationale for standardization. The purpose of this primer is to assist CIOs who have been entrusted with the management of LMR networks in addressing potentially unfamiliar issues unique to such networks. This primer highlights some of the similarities and differences between LMR networks and traditional IT networks from the technical, programmatic, and business perspectives.

Work Zone Safety and Mobility Rule. U.S. Department of Transportation (U.S.DOT), Federal Highway Administration (FHWA), Washington, DC. http://www.ops.fhwa.dot.gov/wz/resources/final_rule.htm. (As of January 2009)

The Work Zone Safety and Mobility Rule was published on September 9, 2004 in the Federal Register. This Web site provides examples of Rule implementation, frequently asked questions, guidance, information materials and presentations to support Rule implementation.