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Generic Continuity of Operations/Continuity of Government Plan for State-Level Transportation Agencies, Research Report 11-01

Frances L. Edwards
San Jose State University, frances.edwards@sjsu.edu

Daniel C. Goodrich

William M. Medigovich

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Generic Continuity of Operations/ Continuity of Government Plan for State-Level Transportation Agencies



MTI Report 11-01



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August 2011

Frances L. Edwards, M.U.P., Ph.D., CEM
Daniel C. Goodrich, M.P.A., CEM
William M. Medigovich, M.A.

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16. Abstract The Homeland Security Presidential Directive 20 (HSPD-20) requires all local, state, tribal and territorial government agencies, and private sector owners of critical infrastructure and key resources (CI/KR) to create a Continuity of Operations/Continuity of Government Plan (COOP/COG). There is planning and training guidance for generic transport or agency COOP/COG work, and the Transportation Research Board has offered guidance for transportation organizations. However, the special concerns of the state-level transportation agency's (State DOT's) plan development are not included, notably the responsibilities for the entire State Highway System and the responsibility to support specific essential functions related to the State DOT Director's role in the Governor's cabinet. There is also no guidance on where the COOP/COG planning and organizing fits into the National Incident Management System (NIMS) or the local or state-level department or agency. This report covers the research conducted to determine how to integrate COOP/COG into the overall NIMS approach to emergency management including a connection between the emergency operations center (EOC) and the COOP/COG activity. The first section is a presentation of the research and its findings and analysis. The second section provides training for the EOC staff of a state-level transportation agency using a hybrid model of ILM's COG and LCI approaches, including a complete set of LCI position checklists, and other training support material. The third section provides training for the COOP/COG Branch staff of a state-level transportation agency, including a set of personnel position descriptions for the COOP/COG Branch members. Please note that this is an MTI technical report, therefore, it is not formatted as a standard MTI research publication.			
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To order this publication, please contact the following:

Mineta Transportation Institute

College of Business

San José State University

San José, CA 95192-0219

Tel (408) 924-7560

Fax (408) 924-7565

email: mti@mti.sjsu.edu

<http://transweb.sjsu.edu>

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The initial impetus for this work was the development of a revised Continuity of Operations/ Continuity of Government plan (COOP/COG) for the California Department of Transportation (Caltrans). The work was supported by both Caltrans funding and a Department of Homeland Security grant to the National Transportation Security Center of Excellence, Mineta Transportation Institute.

The researchers investigated best practices at the local, state and federal level, and drew on extensive personal experience with COOP/COG development and implementation at the state and federal levels. While conducting COOP/COG best practices research as the groundwork for the Caltrans project, the researchers had become aware that many state level transportation agencies did not have adequate professional staff time available to develop a thorough COOP/COG plan. Instead they were often relying on outside contractors with experience in Information Technology, but little information about the operational needs of a state level department of transportation during a COOP/COG event. The researchers determined that a generic COOP/COG plan developed by experienced emergency management professionals would provide a more useful baseline for State-level Department of Transportation staff members to use in developing an agency-specific COOP/COG plan.

We are especially grateful to Herby Lissade, Caltrans' emergency manager, for his insight into emergency management needs in a state level transportation agency; to Steven Takigawa, Deputy Director for Maintenance and Operations, Caltrans, for his support of staff participation in the development of the COOP/COG revision; and to Randall Iwasaki, Director of Caltrans, for his support for development of a robust COOP/COG capability within Caltrans. Mineta Transportation Institute research associate Waseem Iqbal worked with the research team on the delivery of emergency management training to Caltrans, and shared his knowledge of federal agency COOP/COG priorities and focus.

The Mineta Transportation Institute was the overseer of the project. We are grateful to Research Director Dr. Karen Philbrick, who provided support for the creation of this report, and Executive Director Rod Diridon, who has contributed a continuing focus on emergency management in the Institute that led to the issuance of this report. Thanks to MTI staff including Director of Communications and Special Projects Donna Maurillo, Research Support Manager Meg Fitts, and San José State University student staff including Graphic Artist J.P. Flores. As always, our sincere thanks to our patient editor, Cathy Frazier, who labored through innumerable versions of and changes to this document to create a report that will be easily used by COOP/COG planners in state-level transportation agencies nationwide.

USING THE GENERIC COOP/COG PLAN

The state-level transportation function is essential for all emergency and disaster response and recovery operations. No other response can occur without a functioning road system. Airports, ports and transit services are crucial to evacuation, shelter establishment, and logistics support for the immediate preparation for an impending disaster, as well as for response and recovery operations. Therefore, establishing a Continuity of Operations Plan (COOP) for every state-level transportation agency is an essential part of emergency management and homeland security planning.

Transportation is also a key function of the state government. The governor generally appoints the Director of Transportation, who generally also sits on the state-level emergency management advisory committee to the governor. State-level transportation agencies also support local government transportation agencies in planning, developing and implementing transportation projects. Therefore, there are also Continuity of Government (COG) elements to the planning process.

The Federal Emergency Management Agency (FEMA) has provided guidance for COOP/COG across local and state government agencies in Continuity Guidance Circular 1 for Non-Federal entities (CGC-1), January 21, 2009, and Continuity Guidance Circular 2, Continuity Guidance for Non-Federal Entities: Mission Essential Functions Identification Process, (CGC 2), July 22, 2010. The Transportation Research Board has created *Continuity of Operations Planning Guidelines*, NCHRP Report 525, Volume 8, in 2005. However, this guidance pre-dates the post Hurricane Katrina legislation, as well as the lessons learned in COOP/COG from Katrina. However, there is no specific guidance for transportation departments, whose activities are uniquely multi-layered, in reconciling NIMS and COOP. For example, state-level transportation agency essential functions will include independent actions and actions that must be coordinated with federal and local partners. Some state-level transportation agency essential functions are driven by federal primary mission essential functions and mission essential functions, for example. Funding and direction for transportation operations comes from federal agencies such as the Federal Highway Administration, as well as through state legislation, while state-level transportation planning for emergency circumstances must be integrated with other state agency and local government plans.

This generic COOP/COG is intended to serve as a template for individual states to use in the development of their own unique COOP/COG Plans. The researchers owe a debt of gratitude to the California Department of Transportation (Caltrans) for their participation in the development of a state-specific transportation COOP/COG plan that meets California's state mandates and risk-based needs. While this generic plan benefits from the research and discussions that led to the California plan, it is based on the authors' conceptions

of best practices across all states, independent of specific state needs and constraints. Each state will need to factor in their risk analysis, organizational structure, state mandates and unique operations in using this template.

For the purpose of developing a generic plan, some material has been included as examples that will have to be replaced by each state. Such material has been designated within square brackets as a guide to the plan developer. In some states this material will simply be deleted, while in others state-specific material should be substituted. For example, the risk analysis provided here offers a generic assessment that is intended as typical of what might be included in a state-level transportation agency's COOP/COG. Individual users will need to reference the risk analysis included in the state's Emergency Operations Plan or the State Hazard Mitigation Plan (as required by Disaster Mitigation Act, 2000), and substitute that risk information within the COOP/COG planning process, most notably in the selection of the alternate locations for the continuity facilities.

There was little material available on the development of transportation-specific essential functions lists. The twenty-four items on the essential functions lists in this generic plan include all of the Primary Mission Essential Functions (PMEF) and Mission Essential Functions (MEF) from the federal guidance. The list also includes activities that large state transportation agencies have deemed essential to their support of state-level essential functions during a disaster. Each state-level transportation agency planner should evaluate the importance of these generic essential functions and add to or delete from the list based on the state's risk analysis, organization structure and individual priorities.

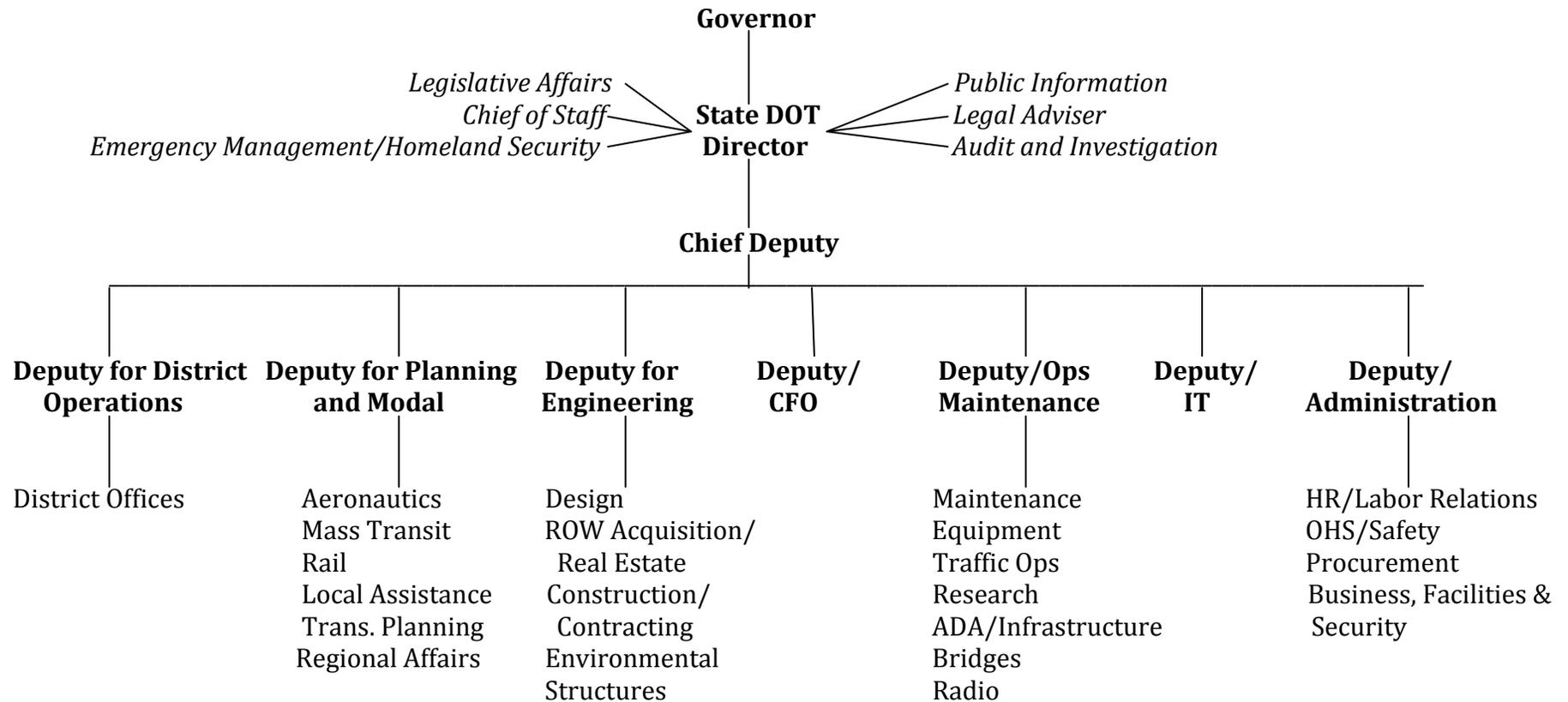
A Generic State DOT Organization Chart (Figure 1) is provided as the basis for the development of this plan. The organizational structure was based on research using five large state transportation agencies, but does not actually represent any specific state organization. This table of organization was used as the basis for the assignment of work to specific individuals within this generic plan. The COOP/COG planner can substitute the appropriate organizational titles and table of organization from his own agency, and use the generic Table 1 to easily translate the generic titles to the correct transportation agency-specific titles.

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<http://transweb.sjsu.edu/PDFs/education/11zAn7.doc>

Generic State DOT Organization Chart

Generic State DOT Organization Chart



Note: This organization chart was developed using the charts of five large state Transportation organizations. It serves as the background organization for the generic Continuity of Operations/Continuity of Government Plan (COOP/COG) when assigning individual and departmental responsibilities within the Essential Functions. Organizations using this plan as a template should substitute their own organization charts and change the Essential Functions assignments to fit the analogous positions within the actual organization.

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1. COOP/COG PLAN APPROVALS

By the signature below, the following senior level officials certify that they approve this Continuity of Operations/Continuity of Government (COOP/COG) Plan and fully understand the continuity of business operation procedures that are to be followed in the event of an emergency that impacts the facilities and employees for which they are responsible.

Approved: Signature _____

Title: _____

Date: _____

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2. EXECUTIVE SUMMARY

Introduction and Background¹

This plan was completed in accordance with State [Executive Order or Directive number and date]. In anticipation of major catastrophic disasters, State DOT must be prepared to maintain operations throughout all types of destructive events, including natural and technological hazards and enemy attack by any method.

Continuity of Government has been defined as the preservation, maintenance or reconstitution of the civil government's ability to carry out its constitutional responsibilities. State DOT is responsible for ensuring the continued mobility of the people, goods and services in the State. This COOP/COG plan describes the State DOT's strategy and the role of its headquarters organization in meeting its responsibilities in the event of COOP/COG activation.

It reflects current Federal, State and Agency policies which govern the protection of State DOT employees and physical assets, and ensures the continuity of State DOT's essential functions.

The plan allows State DOT to address the survivability of its mandated and/or vital services, State and National Essential Functions, and the preservation of the State's transportation system during a disaster or catastrophic event. State DOT strives to obtain the operational capability at a continuity site(s) as soon as possible, and within 12 hours of activation.

Emergency Plans & Procedures

State DOT has multiple plans to respond to natural and man-made disasters, including the Emergency Operations Plan (EOP), Disaster Recovery Plan (DRP) for information technology, and [plans specific to terrorism and pandemic illness]. The COOP/COG Plan does not replace any of these plans, but complements them.

Mission Essential Functions

The COOP/COG plan ensures the ability of the Headquarters (HQ) facility to perform the State DOT's mission essential functions as defined by the [Executive Directorate]. These mission essential functions also reflect the cross-government State Essential Functions that must be continued under all

¹ This generic plan uses brackets for items that must be supplied by the agency customizing the plan for its own use. All agencies are encouraged to use this as a guidance document to create a unique Continuity of Operations Plan that best meets the needs of the agency.

circumstances to enable the Executive Branch to carry out its critical government functions and services.

Line of Succession/Delegation of Authority

The line of succession and delegation of authority has been established for key leadership positions. The orders of succession are an essential part of the State DOT's continuity of operations plan and ensure that personnel know who assumes authority and responsibility if day-to-day leadership is incapacitated or becomes otherwise unavailable during a continuity situation.

Continuity Facilities

[Three] Continuity Facilities have been identified. The COOP/COG leadership team continues to review each facility to identify specific requirements as driven by State DOT's essential functions and the needs of the essential personnel expected to staff the facility. This includes selective pre-staging of equipment, materials and appropriate reference materials.

Continuity Communications

Most of the essential functions of State DOT are related to command and control, and as such, State DOT has a number of communication options at its disposal to ensure that senior leadership in the Policy Group and Emergency Relocation Group can be kept informed while in transit to continuity facilities. These include, but are not limited to: [State DOT 2-way Land Mobile Radio Communications System, State Microwave Telephone System,] as well as many other standard communication methods, such as personal digital assistants.

Protection of Government Resources, Facilities, and Personnel

State DOT recognizes the responsibility to safeguard its employees. Strategies for safeguarding resources include disaster preparedness training for employees, protecting worksites, and adequately equipping continuity worksites.

Safeguarding Vital Records and Databases

This plan identifies emergency operating records, rights and interest records, and databases. These include those essential to the continued function or reconstitution of State DOT, and those which protect the legal and financial rights of State DOT.

Devolution of Command and Control

State DOT prepares for notice and no-notice events, and takes into consideration the transfer of leadership and essential functions away from the Headquarters facility to the continuity facility.

Reconstitution

State DOT will determine the timeline for reconstitution depending on the nature and scope of the emergency which prompted the activation of the COOP/COG plan and relocation. Senior leadership will initiate this process using the State DOT Organization Chart as the foundation. They will verify that all systems, communications and other required capabilities are available and operational and that essential functions can be conducted at the new or restored headquarters facility. A full After Action review will be undertaken to assess the effectiveness of continuity operations, plans and procedures.

Original signed by: [name]
Director, State DOT

Date

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3. INTRODUCTION AND BACKGROUND

Continuity of Operations (COOP) and Continuity of Government (COG) planning ensures the continuation of State DOT's essential functions through a wide range of emergencies and disasters. The current threat environment, and recent natural, technological and human-caused emergencies demonstrate the need for COOP/COG capabilities and plans at the local, regional, state and federal levels. This planning is recognized as a "good business practice"—part of the fundamental mission of all federal, state and local agencies as responsible and reliable public institutions.

The recently changing threat paradigm and no-notice emergencies, including localized acts of nature, accidents, technological emergencies, and military or terrorist attack-related incidents, have shifted awareness to the need for robust COOP/ COG capabilities. These capabilities enable agencies to continue their essential functions across a broad spectrum of disasters in support of an enduring constitutional government. The potential for terrorist use of weapons of mass destruction, and the possibility of an infectious disease outbreak, have emphasized the importance of COOP/ COG programs to ensure continuity of essential functions.

The objective of COOP/COG planning is to direct and guide appropriate actions to ensure that the capability exists to continue essential business functions and activities, and to achieve an orderly recovery from emergency situations across a wide range of potential emergencies or threats, including acts of nature, accidents, technological, and attack-related emergencies. Specifically it:

- Ensures the performance of an agency's essential functions/operations during an event.
- Protects employees and assets to minimize damage and loss.
- Executes, as required, Succession to Office with accompanying authority in the event a disruption renders agency leadership unable, unavailable, or incapable of assuming and performing their authorities and responsibilities of office.
- Reduces or mitigates disruptions to operations.
- Ensures that agencies have alternate facilities from which to continue to perform their essential functions during an event.
- Protects essential facilities, equipment, vital records, and other assets.
- Achieves a timely and orderly recovery from an emergency and reconstitution of normal operations that allows resumption of essential functions for both internal and external clients.
- Ensures and validates readiness through a dynamic, integrated test, training, and exercise program to support the implementation of the plans.

To plan effectively for COOP/COG incidents one must first understand the distinct emphasis of each:

- Continuity of Operations planning is an effort within individual departments and agencies to ensure the *continued performance of minimum essential functions* during a wide range of potential emergencies. Essentially, it is the capability of maintaining the business of government under all eventualities. This is accomplished through the development of plans, comprehensive procedures, and provisions for alternative facilities, personnel, resources, continuity communications, and vital records/databases.
- Continuity of Government planning is the *preservation, maintenance, or reconstitution of the institution of government*. It is the ability to carry out an organization's constitutional responsibilities. This is accomplished through succession of leadership, the pre-delegation of emergency authority and active command and control.

4. PURPOSE AND ASSUMPTIONS

Purpose

The COOP/COG plan ensures that State DOT is able to continue its vital governmental services and operations under all conditions. For this to take place, plans must be in place to carry out essential functions without interruption. This plan complies with Continuity Guidance Circular 1 for Non-Federal entities (CGC-1), July 22, 2010; [State Emergency Management organization] Continuity Planning Guide; and relevant State Executive Orders through which the [State Emergency Management organization] provides guidance to the Department and other Executive branches on the development of their COOP/COG Plans.

State DOT's role of protecting and maintaining the transportation infrastructure of the state is vital to the ability of the state to respond to and recover from emergencies.

Assumptions

Emergencies or threatened emergencies may adversely affect State DOT's ability to continue to support essential internal operations, to provide transportation for people, goods and services, and to support external agencies.

Personnel and other resources from State DOT and other organizations outside the emergency or threat area will be made available as required to continue essential functions.

Emergencies and threatened emergencies differ in order of priority or impact.

While this COOP/COG plan may be activated in response to a wide range of possible emergencies, the disruption scenarios employed in the development of the plan are described in the Risk Analysis section of the plan, starting on page 6-4.

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5. APPLICABILITY AND SCOPE

APPLICABILITY

Continuity of Operations/Continuity of Government (COOP/COG) Plan

The COOP/COG plan is a separate, but critical component of all-hazards emergency preparedness, response and recovery. The plan is activated under specific circumstances that disrupt the internal operation of State DOT, or that result in the loss of the headquarters facility, or during emergencies that have a catastrophic effect on the transportation agency as a whole. If any of these circumstances should occur, the COOP/COG Branch Director will activate the COOP/COG Plan, and the Emergency Relocation Group will be expected to begin essential functions within 12 hours of the event. The plan integrates with the following other State DOT emergency plans.

Emergency Operations Plan (EOP)

The State DOT Emergency Operations Plan will be used for most natural, technological or human-caused disasters. It may also be used in conjunction with the special circumstances of a COOP/COG activation, depending on the situation as determined by the EOC Director in consultation with the Policy Group.

Disaster Recovery Plan (DRP)

The DRP provides the required organization, communication, and recovery steps to ensure that critical IT applications that support State DOT's essential functions are restored within Maximum Acceptable Outage (MAO) time frames. The DRP meets all the published requirements of the State DOT Office of Information Security. The DRP is structured to include:

- Information Technology (IT) management emergency response, including key management and technical personnel
- Activation of the Crisis Communication Center (CCC)
- IT damage assessment
- IT disaster declaration
- Activation of part or all of the IT recovery strategies
- Beginning IT infrastructure, system, and application recovery
- Emergency operations and primary site restoration

Guidelines for Response to National Terrorist Threat Levels

The Guidelines for Response document describes the Threat Conditions and provides guidance in creating and implementing the protective measures for State

Departments and agencies. The content and format were developed using existing, available information and input from the [Intelligence and Early Warning Subcommittee of the State Strategic Committee on Terrorism]. The guidelines describe specific protective measures that should be followed for each level of threat.

State DOT Pandemic Influenza Response Plan

The Pandemic Influenza Response plan incorporates all of State DOT's essential functions. In the event of a pandemic influenza outbreak available personnel will be shifted to ensure the immediate continuity of the State Highway System essential operations, maintenance and administrative functions. Wherever possible, State DOT would use telecommuting/ telework to minimize employee exposure to potential infection and to ensure that those employees who are confined but are able to work can contribute to State DOT's continuity of business. State DOT could request mutual aid or contract out to handle personnel shortfalls that affect maintenance, operations and capital projects.

SCOPE

The COOP/COG Plan takes into consideration the importance of ensuring continuity of leadership in State DOT. It emphasizes the importance of the delegation of emergency authority and the development of orders of succession in the event of the loss of senior leadership, and/or the loss of the headquarters facility. The plan recognizes the role of State DOT in supporting vital state and national essential functions and enduring constitutional government. In addition to sustaining essential functions, the plan also provides a guide for restoring State DOT operations and building functions.

The plan coordinates the transition from an emergency operation mode to normal operations. The plan outlines the processes for the resumption of full services to a pre-emergency state.

6. ESSENTIAL FUNCTIONS

Essential functions are those organizational functions and activities that must be continued under any and all circumstances. The identification of essential functions is a prerequisite for all COOP/COG planning. Unless an organization’s essential functions are correctly and completely identified, its COOP/COG Plan may not effectively ensure that the most vital government services can be maintained in an emergency.

The State has designated State Essential Functions, and the federal government has designated primary mission essential functions and mission essential functions. State DOT Headquarters’ essential functions are designated to ensure that the critical missions of transportation are fulfilled.

State DOT Headquarters’ essential functions will be carried out by many elements of the organization. Table 6-1 lists the essential functions in priority order, designates the responsible operating unit and notes which external organization essential functions are supported by each State DOT essential function.

Table 6-1: Prioritized Essential Functions

#	State DOT Operating Unit	Essential Functions	Priority (A, B, C)	State Essential Function	PMEF ²	MEF ³
1	Director/ Chief Deputy Director	Direct State DOT emergency response and recovery efforts; order activation of COOP/COG; activation of continuity facilities; support the State emergency response effort; ensure State DOT’s coordination with local and Federal response agencies	A	X	X	
2	Director/ Chief Deputy Director	Perform oversight of essential maintenance elements for State Highway System (SHS)	A	X	X	X

² Primary Mission Essential Function, Federal Continuity Directive 2010

³ Mission Essential Function, Federal Continuity Directive 2010

#	State DOT Operating Unit	Essential Functions	Priority (A, B, C)	State Essential Function	PMEF ²	MEF ³
3	Director/ Chief Deputy Director	Oversee response to emergency situations that affect the safety and operation of the State Highway System.	A	X	X	
4	Public Information	Provide transportation system information to government entities, private sector and general public.	A	X	X	
5	Administration / Business, Facilities & Security	Emergency worksite hazard analysis	A			X
6	Director/ Chief Deputy Director	Activate COOP, continuity site, evacuate, shelter in place	A			X
7	Administration / Procurement	Facilitate emergency contracts and procurement.	A	X	X	
8	Administration / Procurement	Acquire and distribute emergency goods and services.	A	X	X	
9	Administration / Business, Facilities & Security	Provide essential building operations and maintenance and security.	A			X
10	Deputy Director-CFO	Safeguard the funds collected.	A	X	X	
11	Director/Chief Deputy Director	Provide timely and accurate reporting (Legislative, Financial) to address State DOT's business needs.	A	X	X	

#	State DOT Operating Unit	Essential Functions	Priority (A, B, C)	State Essential Function	PMEF ²	MEF ³
12	Maintenance and Operations/ Radio	Maintain the telecommunications infrastructure.	A	X	X	
13	Maintenance and Operations/ Bridge	Inspect bridges.	B			X
14	Emergency Management/ Homeland Security	Respond to Homeland Security alerts.	A	X	X	
15	Maintenance and Operations/ Traffic Operations- Truck Services	Issue transportation permits for oversized/overweight vehicles.	A	X	X	
16	Deputy Director, Planning & Modal	Coordinate and provide mutual aid to Regional Transportation Planning Agencies, Metropolitan Planning Organizations.	B			X
17	Deputy Director/CFO	Process vendor and government agencies' payments timely and accurately.	A			X
18	Deputy Director/CFO	Collect all disaster moneys owed to State DOT, including Federal funds	A	X	X	
19	Deputy Director/ IT	Maintain the network (e.g. Email) infrastructure and software (e.g. CAD, GIS, MS Office Suite) systems.	A	X	X	

#	State DOT Operating Unit	Essential Functions	Priority (A, B, C)	State Essential Function	PMEF ²	MEF ³
20	Deputy Director for District Operations	Oversee district management of ongoing construction projects (e.g. financial, project oversight, safety, project process, supervision)	B			X
21	Administration / Human Resources	Pay employees and maintain leave and benefits systems.	B			X
22	Administration / Procurement	Facilitate non-emergency contracts and procurement.	C			
23	Administration / Procurement	Acquire and distribute non-emergency goods and services.	C			
24	Deputy Director, Planning & Modal Programs	Ensure the safety of general aviation airports and helipads within the State	B			X

RISK ANALYSIS [the following analysis is intended only as an example. Each State DOT must evaluate its actual threats and document them here.]

State DOT, like many organizations, can encounter risks and hazards that may impact its operations. Risks can be attributable to natural hazards, human-related hazards, and technology-related hazards. Listed below are the hazards, by type, that would have a significant impact on State DOT’s ability to perform its essential functions.

Natural Hazards

Fires

Fires continue to be the number one cause of business interruption. Over 35,000 fires occur in businesses in the United States each year. State DOT has taken measures to comply with the state fire code to environmentally protect its major

computer/server systems; however, the facilities still contain equipment, furniture, extensive amounts of work in process, and vital records that, if lost, would need to be replaced at significant expense to State DOT.

State DOT Headquarters is located in a densely-populated urban area where fires and conflagrations are possible. Fires in adjacent areas of the neighborhood or utility-caused fires (such as electrical transformer explosions or gas line ruptures) could result in fire spreading to the State DOT Headquarters facility, either causing direct damage or denying access to the facility for prolonged periods.

Wildland Urban Interface Fires (WUI) occur seasonally. Although State DOT Headquarters is not in a WUI zone, access to Headquarters and other owned and leased facilities may be restricted by fires in adjacent areas that may block roadway access due to smoke, congestion, or direct damage to State DOT's infrastructure.

Flooding

Some of State DOT's facilities are located in areas that could potentially experience severe flooding. The facilities in the state capital, located in proximity to the ABC River, are in a medium-risk category for flooding. Although these offices themselves may not be directly threatened by floodwaters, access to State DOT Headquarters and the other owned and leased facilities may be restricted for an extended period of time until the flooding subsides.

Flooding could also be related to dam failure and levee failure.

[State DOT's Headquarters facility and other owned facilities are in Flood Zone AR⁴ according to the Federal Emergency Management Agency (FEMA). Most of XYZ County, where State DOT Headquarters facilities are located, is in an area classified as either a Zone AR or a Zone X.⁵]

The state capital area is not prone to flash flooding, and therefore State DOT would likely have an early warning of an impending flood.

Earthquake [if applicable]

Many of the State DOT's District Office Headquarters are located close to major

⁴ A Zone AR is an area of special flood hazard which results from the decertification of a previously accredited flood protection system which is determined to be in the process of being restored to provide a 100-year or greater level of protection.'

⁵ A Zone X indicates areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.'

fault lines and would be significantly affected by an earthquake. There are known major faults in the capital area. According to the United States Geological Survey (USGS), the Mountain Fault Zone and Lake Fault Zone are the two largest in the vicinity. No earthquakes of a large magnitude have occurred on these faults within the past 100 years.

The greatest earthquake danger for the capital city area may come from earthquakes of larger magnitudes that occur outside the immediate vicinity, such as on the A Fault or on the B Fault. Earthquakes on either of these two fault lines could cause widespread damage as far away as the capital city. Recent analysis also suggests that a strong earthquake in an adjacent metropolitan area could compromise the delta levees, potentially resulting in flooding in the capital city area.

Human-Related Hazards

Hazardous Material Incident

Several of State DOT's offices are close to major freeways and roadways, which creates the opportunity for a transport vehicle to cause a chemical or hazardous material spill that may result in the evacuation of State DOT facilities or severely limit building access. State DOT facilities in the capital city area are close to freeways and/or railways that create the potential for chemical or hazardous material spills or other related incidents.

Public Health Emergencies

The threat of a public health emergency, such as pandemic influenza, is unique in that it is not geographically or temporally localized. A pandemic flu threatens State DOT's human capital, and steps must be taken to mitigate the impact of a widespread illness. Delegations of authority and lines of succession are especially important when facing a threat which can potentially incapacitate 40% of the workforce. Efforts must be taken to isolate workers and reduce the risk of spreading infection in the workplace. To mitigate this risk State DOT has developed a Pandemic Influenza Response Plan which includes surveillance, workplace mitigation and telework plans.

Terrorism, Sabotage, or Workplace Violence

State DOT, like most organizations, is subject to deliberate threats from individuals or groups who may want to cause harm to the organization. State DOT may become a target of domestic eco-terrorists due to its infrastructure development or improvement work in natural areas. Additionally, transportation infrastructure may be targeted by individuals or groups seeking to disrupt the State's economic or industrial base.

Since the 1995 Oklahoma City Murrah Building bombing, and the September 11, 2001 attack on the Pentagon and World Trade Center (owned by the Port Authority of New York and New Jersey), the potential for terrorist use of weapons of mass destruction, weapons of mass disruption and weapons of mass killing against government facilities has demonstrated the importance of programs to ensure continuity of essential functions, which has shifted the focus of agencies statewide.

The January 2001 truck attack on the California State Capitol building, directly across the street from the State DOT Headquarters building, demonstrates vulnerability to terrorism. Many times state capital areas represent a concentration of governmental agency facilities, so that an attack on one may generate unintended but severe damage to another.

Disgruntled employees have intentionally sabotaged workplace equipment, leading to denial of service/denial of use events, and work place violence has led to buildings being declared crime scenes and becoming inaccessible for days to weeks.

Technology-Related Hazards

Information Technology Hazard

Critical business units are utilizing stand-alone applications and databases on isolated PCs. In these cases a simple hardware failure such as the loss of a disk drive could cause extensive disruption to State DOT's operations.

State DOT has installed many of its applications on server operations in a decentralized environment. It is possible that an event such as widespread illness, workplace sabotage, or workplace violence, could place an insurmountable burden on these decentralized resources. Such an event may result in a breach of operations integrity. Operational disruptions are most likely to occur within those systems requiring data from other interrelated systems.

Utility Cut or Break

State DOT's Headquarters building is served by public utilities. Explosions of electrical transformers and gas pipeline ruptures (like the one in San Bruno, CA in 2010) can cause direct damage from the explosion, damages from secondary effects like fire, or simply denial of service as utility infrastructure is damaged.

In the instances described above, there are measures in place to mitigate these risks to State DOT through various plans including but not limited to: Emergency Operations Plan, Disaster Recovery Plan, Guidelines for Response to National Terrorist Threat Levels, Emergency Plan for Headquarters, and the Pandemic Influenza Response Plan.

VULNERABILITY ASSESSMENT

State DOT has evaluated the various identified hazards that pose threats to the organization's Headquarters, and considered its vulnerabilities to them. The primary vulnerability is the centralized location of human capital, IT resources and vital records at one exposed location adjacent to the state capitol building, a well-known landmark, in an area that is prone to flooding. The location being within a densely populated urban area is also a vulnerability. Finally, State DOT has a high profile as the provider of transportation infrastructure for the state.

As a networked organization, some of this vulnerability is offset because some vital records are stored electronically on more than one server, or on servers owned by others, such as the personnel and payroll systems. State DOT is also somewhat decentralized, as its [number of] districts replicate much of the capability in human capital that is present in the Headquarters facility. The largest districts also replicate much of the equipment and capability to support State DOT essential functions in the absence of Headquarters.

Recognizing its vulnerabilities and capabilities, State DOT has developed protection and mitigation measures where possible. However, vulnerability to the primary threats remains, requiring a robust COOP/COG capability.

RESOURCE REQUIREMENTS

Resource Requirements for Essential Functions describes the extent of this assessment. Many of these resources are covered by the Disaster Recovery Plan (DRP). Those plans identify continuity work sites, location of backups for important data, and plans for resumption of normal business operations from the IT perspective. Vital records and human capital are needed for COOP/COG operations, however the exact nature of the disruption and the assets available at the COOP/COG continuity location will dictate the exact resources required for maintenance of essential functions. The Risk Analysis above reviews the principal threats to State DOT Headquarters' continued functioning, any of which might lead to temporary relocation of State DOT Headquarters essential functions for days to years. Staffing needs would be impacted by whether the event allowed for an orderly shutdown and removal from Headquarters, or required organizing staffing through the return of personnel from off duty. Table 6-2 shows generic estimates of requirements.

Table 6-2: Resource Requirements

#	State DOT Operating Unit	Essential Functions	Staffing Needed
1	Director/ Chief Deputy Director	Direct State DOT emergency response and recovery efforts; order activation of COOP/COG; activation of continuity facilities; support the State emergency response effort; ensure State DOT's coordination with local and Federal response agencies	Event dependent, all COOP Team Members
2	Director/ Chief Deputy Director	Perform oversight of essential maintenance elements for State Highway System (SHS)	Event dependent, COOP Team
3	Director/ Chief Deputy Director	Oversee response to emergency situations that affect the safety and operation of the State Highway System.	Event dependent, COOP Team
4	Public Information	Provide transportation system information to government entities, private sector and general public.	Event dependent, minimum 3
5	Administration/ Business, Facilities & Security	Emergency worksite hazard analysis	Event dependent, Minimum 3
6	Director/ Chief Deputy Director	Activate COOP, continuity site, evacuate, shelter in place	Event dependent, minimum COOP Team
7	Administration/ Procurement	Facilitate emergency contracts and procurement.	Event dependent
8	Administration/ Procurement	Acquire and distribute emergency goods and services.	Event dependent
9	Administration/ Business, Facilities & Security	Provide essential building operations and maintenance and security.	Event dependent
10	Deputy Director-CFO	Safeguard the funds collected.	Event dependent

#	State DOT Operating Unit	Essential Functions	Staffing Needed
11	Director/Chief Deputy Director	Provide timely and accurate reporting (Legislative, Financial) to address State DOT's business needs.	Event dependent
12	Maintenance and Operations/Radio	Maintain the telecommunications infrastructure.	Event dependent
13	Maintenance and Operations/Bridge	Inspect bridges.	Event dependent
14	Emergency Management/Homeland Security	Respond to Homeland Security alerts.	Event dependent
15	Maintenance and Operations/Traffic Operations-Truck Services	Issue transportation permits for oversized/overweight vehicles.	Event dependent
16	Deputy Director, Planning & Modal	Coordinate and provide mutual aid to Regional Transportation Planning Agencies, Metropolitan Planning Organizations.	Event dependent
17	Deputy Director/CFO	Process vendor and government agencies' payments timely and accurately.	Event dependent
18	Deputy Director/CFO	Collect all disaster moneys owed to State DOT, including Federal funds	Event dependent
19	Deputy Director/ IT	Maintain the network (e.g. Email) infrastructure and software (e.g. CAD, GIS, MS Office Suite) systems.	Event dependent
20	Deputy Director for District Operations	Oversee district management of ongoing construction projects (e.g. financial, project oversight, safety, project process, supervision)	Event dependent
21	Administration/ Human Resources	Pay employees and maintain leave and benefits systems.	Event dependent

#	State DOT Operating Unit	Essential Functions	Staffing Needed
22	Administration/ Procurement	Facilitate non-emergency contracts and procurement.	Event dependent
23	Administration/ Procurement	Acquire and distribute non-emergency goods and services.	Event dependent
24	Deputy Director, Planning & Modal Programs	Ensure the safety of general aviation airports and helipads within the State	Event dependent

FUNCTION DEPENDENCIES

Most of the essential functions of the State DOT Headquarters are related to command and control, and as such, are dependent on communications and information technology infrastructure. State DOT has identified alternate communication methods as documented in Table 6-3: Communication Methods.

Table 6-3: Communication Methods

Communication Methods
2-Way Land Mobile Radio Communications System
State Microwave Telephone System
Public Telephone Systems and Facsimile Operations
PDA's/ Cellular Telephone Systems
Vehicle Scanners (can be used to monitor radio transmissions)
Amateur Radio Organization (RACES, ARES, in-house capability)
State DOT Wide Area Network (WAN)
Computer Systems (e-mail)
Emergency Satellite Telephone System (ESAT)

Table 6-4: Functional Dependencies of State DOT lists the activities that State DOT must sustain (A) with no more than 12 hours' disruption, (B) no more than

72 hours' disruption, and (C) and no more than 30 days' disruption. This table demonstrates essential functions that require the use of resources that are not within State DOT's control.

Table 6-4: Functional Dependencies of State DOT

Department	Level	Resource
State Highway Patrol	RTO: A	Road access, traffic control, enforcement actions, dignitary security escort
State Level General Services Administration: Contracts	RTO: A	Resupply, employee support, facility security, relocation, equipment acquisition, private vendor interface, emergency work contracts, debris removal contracts
	RTO: C	Permanent repair contracts, large purchases of supplies and equipment
State Level General Services Administration: Real Estate	RTO: C	Long term relocation, headquarters repair/replacement
Private vendors	RTO: A	Food, water, sanitation resupply
	RTO: B	Lodging, equipment, hotels
Public Utilities	RTO: A	Electricity, water, internet
	RTO: B	Heat/hot water, phone, cable TV

Code: RTO: A = 12 Hours; RTO: B= 72 hours, RTO:C = not over 30 days

Maintaining or restoring the road system is State DOT's most important function. Passable roads are required for any other emergency service or materiel to be delivered.

Coordination with the State Highway Patrol in managing closures and other public use issues is crucial to State DOT staff's safety in the field. Escorts may also be needed for key personnel from home or headquarters to the continuity site, or to meetings with the Governor [and Agency Secretary] at secure locations.

State DOT may have to contract out for additional resources to speed emergency repairs and restoration of its infrastructure. Coordination with the state's budget office and the State General Services' (GS) contracting unit may be required.

Availability of public utilities, at least at the continuity sites, is necessary for the provision of most essential functions. Electricity and water are the minimum requirements for staff support and safety, while internet service is needed for coordination. If generators will have to be used a supply of fuel will be required to

be delivered through private vendors or through state emergency resources. Heat, hot water, phone service, and cable TV will be required within 72 hours to support the personnel, provide command and control access, and support the intelligence collection activities of the Emergency Relocation Group (ERG).

Food, potable water, sanitation supplies and office supplies will have to be replaced in prolonged COOP/COG events. Emergency housing of staff may also be required until access between home and the continuity site has been restored. These activities will require access to private vendor resources through coordination with State GS, possibly through existing contracts, being aware that available resources may be drawn on by multiple consumers.

Security will be required for the continuity site. Existing security contractors will be needed at alternate locations, which may require contract amendments.

Depending on the availability of back-up systems, payroll and accounts payable may have to be handled by a private sector contractor during the emergency. If the COOP/COG event will be long term, State DOT will have to coordinate with the real estate element of State GS for acquisition of a long-term relocation facility and movement of personnel and equipment to that location, and for repair or replacement of the Headquarters facility.

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7. AUTHORITIES AND REFERENCES

COOP/COG planning ensures the continuance and uninterrupted delivery of critical services to the public, other state agencies, tenants, and clients, and recognizes State DOT's personnel that are necessary to enable State DOT to comply with existing statutes, executive orders, mandates, and other applicable laws and regulations.

Principle documents mandating the development and implementation of the COOP/COG plans include:

- Executive Order [number] ensures that the Executive Branch agencies and departments are ready to respond to and recover from natural and man-made incidents. Based on the Executive Order, the ongoing expectation is that State agencies and departments will continue to maintain their COOP/COG plans. The Governor's [Emergency Council] is also committed to the State Continuity Program, [reflected by including the State Continuity Program as one of the key objectives in the State Strategy for Emergency Management and Homeland Security.] As a result, State EMA produced resources and guidance that enable the Executive Branch agencies and departments to enhance and maintain their continuity plans. The focus of the State Continuity Program has expanded to include an emphasis on the broader goal of supporting and continuing State Government and State Essential Functions under all conditions.
- National Security Presidential Directive-51/Homeland Security Presidential Directive- 20 (NSPD-51/HSPD-20) is a National Continuity Policy issued by the President to establish and maintain a comprehensive and effective national continuity capability in order to ensure the preservation of our form of government under the Constitution and the continuing performance of National Essential Functions (NEF) under all conditions.
- Federal Continuity Directives (FCD) developed by the Department of Homeland Security and its partners. The purpose of the FCDs is to provide direction for the development of continuity plans and programs for the Federal executive branch.

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8. CONCEPT OF OPERATIONS

PHASE I: ACTIVATION AND RELOCATION

Depending on the emergency, an assessment would be made of the existing facility. The EOC Director will be responsible for making the decision to move, if necessary, to a continuity facility.

Emergency Operations Plan (EOP)

The State DOT's Emergency Operations Plan (EOP) is based on the National Incident Management System (NIMS) for disaster response. It defines the structure and procedures by which the Department responds to all emergencies. A diagram of the organization of the NIMS structure in the State DOT emergency operations center (EOC) is found in Figure 8-1 on page [8-2].

The *Policy Group* consists of the senior management of State DOT. These individuals relate directly to the governor, the agency secretary and other members of the state's executive branch, and provide information to members of the legislative branch and their staffs. They provide overall policy direction for the management of emergency response and recovery operations, including setting priorities for the use of scarce resources. The Policy Group may be formally activated when the EOC is open, or it may be constituted as a formal briefing process with the EOC Director. The Policy Group may be formally activated when a COOP event occurs, or it may be constituted as a formal briefing process with the COOP/COG Branch Director. When an event occurs that requires a joint EOC/COOP/COG Branch activation, the Policy Group must meet formally to receive the briefings from the EOC Director and the COOP/COG Branch director.

The NIMS structure within the EOC is described fully in the State DOT EOP and depicted in Figure 8-1. It consists of five functions: management, operations, logistics, planning/intelligence and finance/administration. Within the Management Section are the command staff functions: public information, safety, liaison and security.

The EOP describes the responsibilities of the emergency response organization within State DOT. Among other things it addresses the following:

- Procedures for emergency communications with management, staff and other organizational components.
- Procedures for emergency communications with other agencies and emergency personnel.
- Procedures and plans for access to resources, data and systems to conduct essential functions.

Designation of staff and their roles and responsibilities in the emergency organization.

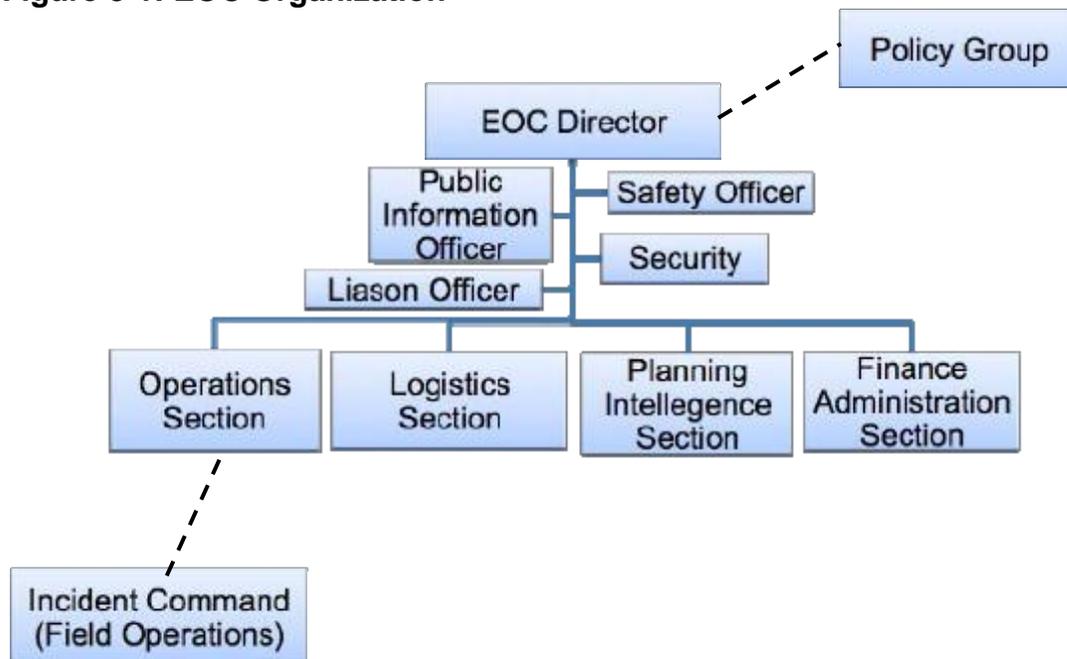
- Provisions for sustaining emergency operations.
- Provisions for emergency personnel accountability.

When a disaster occurs, the Headquarters EOC Director or alternate activates the State DOT Headquarters EOC to maintain State DOT's operations, and coordinate resources and information needed to support the impacted district(s). If capable, the disaster-impacted District(s) will activate their EOCs, respond to the event and as soon as possible, establish communications with the Headquarters EOC.

The Headquarters EOC Director coordinates activities with the State Emergency Management Agency (State EMA), State Operations Center (SOC), [and Regional Emergency Operations Centers (REOC) within the state's emergency management system,] and with the Federal Highway Administration (FHWA).

During a disaster the focus of the EOC is the management of the emergency response, including actions to save lives, prevent additional casualties, protect the environment and protect property. As shown in Figure 8-1, the EOC develops strategic goals in concert with the Policy Group, and coordinates with the Incident Command System (ICS) in the field delivering tactical emergency services. When the response is over, the EOC coordinates recovery and mitigation work on State DOT infrastructure, and the collection of eligible costs from FHWA, from FEMA through State EMA, and from private responsible parties where appropriate.

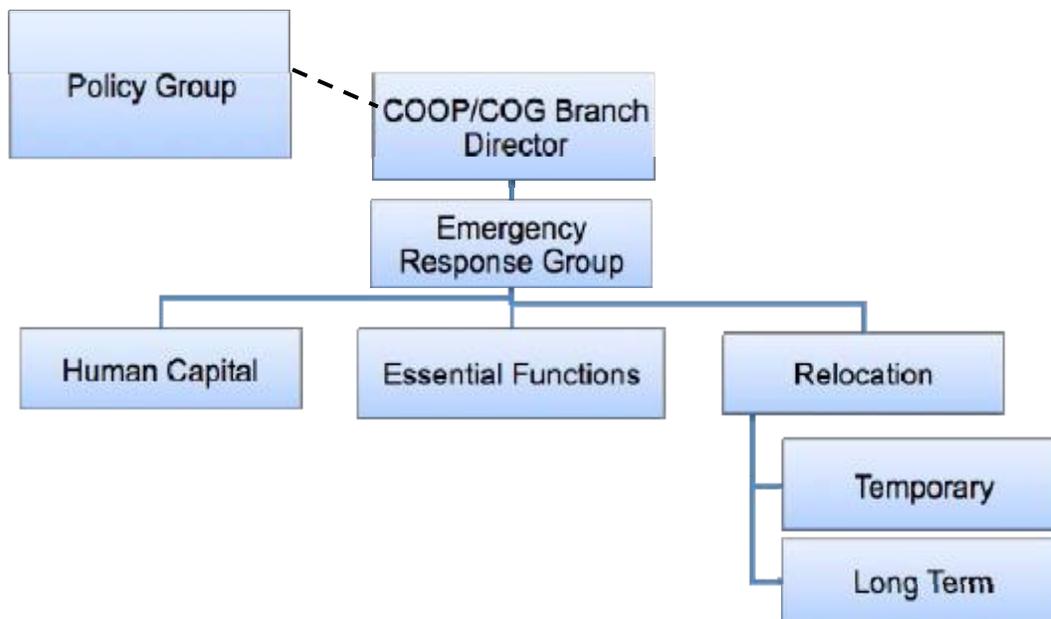
Figure 8-1: EOC Organization



Continuity of Operations/Continuity of Government Plan (COOP/COG)

The COOP/COG Plan would be activated whenever the headquarters facility is inaccessible for a length of time that would disrupt the provision of essential functions. This could include discovery of an unhealthful condition within the building, denial of use of the building through a utility outage or hazardous event, or a threat to the Capitol Mall area. A diagram of the COOP/COG structure is depicted in Figure 8-2.

Figure 8-2: COOP/COG Organization



The COOP/COG Branch has the following responsibilities:

COOP/COG Branch Director

- Coordination with EOC Director
- Participation in the EOC Action Planning meetings
- Overall management of the COOP/COG elements, including the Emergency Response Group (ERG) and the alternate site
- Direction of the activities of the group and units within the branch
- Coordination with Policy Group for direction on long-term relocation or reconstitution

Emergency Relocation Group Supervisor

- Implements the COOP/COG Plan
- Oversees the Human Capital Unit, Essential Functions Unit and Relocation Unit
- Determines the need for devolution of essential functions
- Supports the Branch Director
- Ensures security

Human Capital Unit

- Oversees the management of all State DOT employees
- Ensures that ERG positions are fully staffed
- Locates personnel to augment the ERG to ensure the continuity of essential functions
- Ensures that non-ERG employees are kept informed and deployed through telework and other strategies to support the Essential Functions Unit (EFU)
- Ensures that work time is tracked and payroll managed
- Handles Workers' Compensation and other employee claims
- Ensures that peer defusing and critical incident stress counseling are available to State DOT staff

Essential Functions Unit (EFU)

- The EFU restarts and maintains all activities required to carry out State DOT's designated essential functions
- Manages functional sub-units established at the time of the event that are designed to facilitate the delivery of essential functions, which might include:
 - Administration
 - Finance
 - Engineering
 - Maintenance

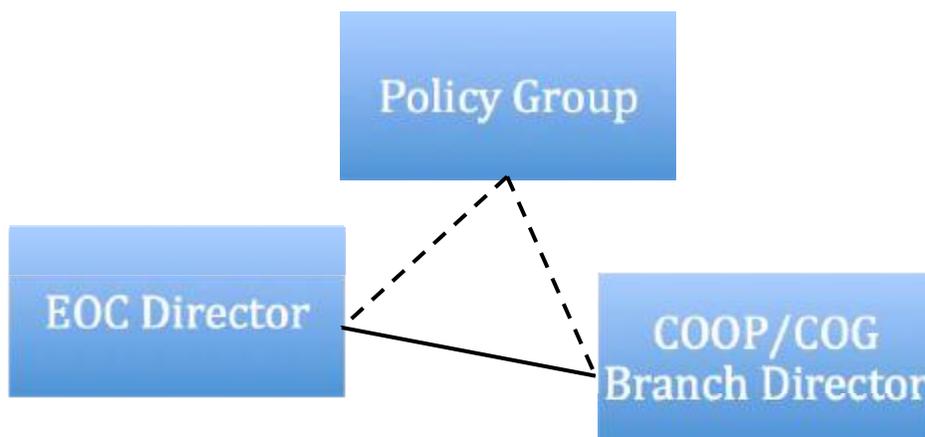
Relocation Unit

- Opens and surveys the continuity facility, evaluates its capability and designates it as the COOP/COG continuity facility for that event
- Provides logistical support to the ERG at the continuity facility
- Provides equipment and materials to ensure the continuity of essential functions at the alternate site
- Identifies the need for long term or permanent relocation of essential functions

- Develops the reconstitution plan, including the repair or replacement of the Headquarters facility

The COOP/COG Plan would generally also be activated for Level III emergencies as defined by State DOT's EOP. Examples would include major earthquakes, regional flooding, storm damage, and alert and warning conditions. A diagram depicting the reporting relationships when the EOC and the COOP/COG organization are both activated is depicted in Figure 8-3.

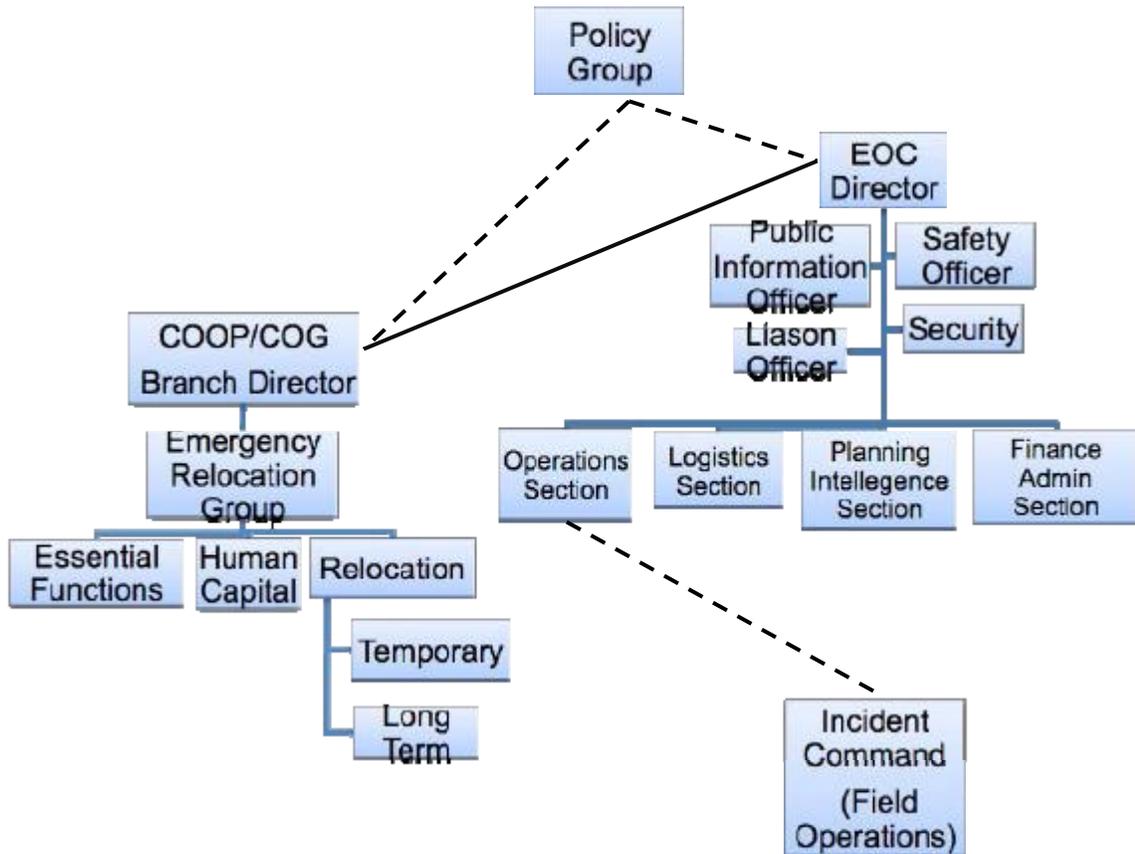
Figure 8-3: EOC/COOP Joint Activation Reporting Relationships



The COOP/COG Branch is part of the Management Section within the EOC NIMS organization, and is activated and tasked by the EOC Director. The diagram depicting the organization chart for the joint activation of the EOC and the COOP Branch is shown in Figure 8-4. As a member of the Management Section, the COOP/COG Branch Director attends and participates in the Action Planning meetings of the EOC. This ensures that the emergency response element is receiving needed support from the COOP/COG Branch, and that the COOP/COG Branch shares the common operating picture developed by the EOC. At the end of each Action Planning Briefing the goals and objectives for the Action Period are set by the EOC Director, and may include objectives for the COOP/COG Branch.

In a COOP event that requires relocation from the headquarters building, the ERG goes to the appropriate alternate location and ensures the continued delivery of the designated essential functions in support of the department, [agency] and governor's office, and of other state agencies, as required. The COOP organization supports the EOC and the Policy Group in their essential functions work through direct service delivery by ERG members who may coordinate the work of other employees using telework and other strategies.

Figure 8-4: EOC/COOP Joint Activation



Disaster Recovery Plan

The Disaster Recovery Plan (DRP) is an adjunct to the COOP/COG Plan and critical to COOP IT-related operations. It provides the required organization, communication, and recovery steps necessary to ensure that critical IT applications that support State DOT’s essential functions are restored within Maximum Acceptable Outage (MAO) time frames. This edition of the State DOT DRP has implemented all published requirements of the [State Office of Information Security.]

Decision Process

The EOP guides the primary response to an emergency. The COOP/COG plan will be triggered by the EOC Director when there is an imminent threat to the provision of State DOT Headquarters’ essential functions, or essential functions supportive of the EOC have been interrupted. An initial assessment of the threat or emergency will be performed by the EOC Director for both Headquarters and the Districts. The threat assessment will guide the decision on whether to

activate the COOP/COG Plan alone, the EOP alone, or both. If necessary, it will also lead to the selection of a continuity facility to carry out the essential functions of State DOT until the emergency is abated adequately for State DOT to again perform its essential functions at the Headquarters facility.

Alert, Notification, and Implementation Process

The objective of the alert notification process is to rapidly and accurately notify key personnel of the decision to relocate in a COOP event. Participants are to execute their portion of the notifications as quickly as possible, relaying the information as received. State DOT Headquarters and the District Headquarters maintain an updated organization chart for essential staff with contact information for use under emergency conditions.

All key personnel will be notified if the event has been determined to be of sufficient magnitude to initiate the COOP/COG plan. Division Chiefs and District Directors maintain their own lists of key personnel with emergency contact phone numbers. These lists are used as necessary by the appropriate Managers or their alternates.

State DOT also uses an internal notification system as the communication mechanism for employees. All State DOT staff members are directed to call this system for updated information once emergency conditions occur. Notification procedures may have to be altered based on specific deficits and capabilities at the time of the event.

LEADERSHIP

Lines of Succession

The COOP/COG Branch has five leadership positions. As shown in the diagrams in Figures 8-3 and 8-4 previously, the COOP/COG Branch Director reports directly to the EOC Director, and serves as a full participant in the EOC Action Planning Briefings. He also briefs the Policy Group either alone or in conjunction with the EOC Director.

The ERG Supervisor oversees all the staff engaged in the delivery of COOP/COG functions. This includes the on-going provision of State DOT's essential functions as identified in Table 6-1 in chapter 6. The Human Capital Unit Leader coordinates ERG and non-ERG employee work to support the essential functions. The Essential Functions Unit Leader ensures that all essential functions are continued. The Relocation Unit Leader oversees the logistical support of the alternate location, the acquisition of additional space and equipment as needed, and the development of the reconstitution plan, including the repair or permanent replacement of the Headquarters facility.

Table 8-1: COOP/COG Branch Supervisory Lines of Succession

COOP/COG Branch Director	Emergency Relocation Group Supervisor	Human Capital Unit Leader	Essential Functions Unit Leader	Relocation Unit Leader
Deputy for District Operations	Deputy for Administration	HR/Labor Relations Manager	Emergency Services Manager	Business, Facilities & Security Manager
Senior Manager, District Operations	Senior Manager, Administration	HR Senior Supervisor	Emergency Services Supervisor	Facilities Supervisor
Senior Staff, District Operations	Senior Staff, Administration	Labor Relations Supervisor	Emergency Services Senior Staff	Facilities Senior Staff

The positions in Table 8-2: Key Positions & Lines of Succession have been identified as essential to ensuring State DOT's ability to manage and direct its essential functions and operations. In the event of activation of the COOP/COG plan, leadership must be available to make policy and resource allocation decisions. If any of the primary staff for any key positions are unavailable to perform the essential function, a successor will assume the responsibilities of the key position and notify the EOC Director using available communications. The successor will formally notify, within 24 hours, the Emergency Operations Center in writing of the reason(s) for succession of a key position and the date and time that the position was assumed.

The direct successor to the Director is the Chief Deputy Director, who is fully delegated with the authority to carry out his or her duties. The Deputy Director of Maintenance and Operations and the Chief Engineer have been delegated the authority to authorize contracts in the Director's absence. Otherwise, direct succession of key leadership is carried out through State DOT's functional organization structure.

In an emergency condition, the EOP provides for additional mechanisms for delegation and succession for key EOC functions.

Table 8-2: Key Positions and Lines of Succession

#	Essential Functions	Key Positions	Successors
1	Direct State DOT emergency response and recovery efforts; order activation of COOP/COG; activation of continuity facilities; support the State emergency response effort; ensure State DOT's coordination with local and Federal response agencies	Director, State DOT	Chief Deputy Director, State DOT
2	Perform oversight of essential maintenance elements for State Highway System (SHS)	Director, State DOT	Deputy, Maintenance and Operations
3	Oversee response to emergency situations that affect the safety and operation of the State Highway System.	Director, State DOT	Chief Deputy Director, State DOT
4	Provide transportation system information to government entities, private sector and general public.	PIO	Deputy PIO
5	Emergency worksite hazard analysis	Chief, Division of Business, Facilities & Security	Manager, Division of Business, Facilities & Security
6	Activate COOP, continuity site, evacuate, shelter in place	Director, State DOT	Chief Deputy Director, State DOT
7	Facilitate emergency contracts and procurement.	Chief, Division of Procurement	Acquisition Office Chief
8	Acquire and distribute emergency goods and services.	Chief, Division of Procurement	Acquisition Office Chief
9	Provide essential building operations and maintenance and security.	Chief, Division of Business, Facilities & Security	Manager, Division of Business, Facilities & Security
10	Safeguard the funds collected.	Deputy, CFO	Chief, Division of Accounting
11	Provide timely and accurate reporting (Legislative, Financial) to address State DOT's business needs.	Director, State DOT	Chief Deputy Director, State DOT

#	Essential Functions	Key Positions	Successors
12	Maintain the telecommunications infrastructure.	Deputy Director, Maintenance and Operations	Chief, Office of Radio Communications
13	Inspect bridges.	State Bridge Engineer	Deputy State Bridge Engineer
14	Respond to Homeland Security alerts.	Chief, Emergency Management and Homeland Security	Deputy Chief, Emergency Management and Homeland Security
15	Issue transportation permits for oversized/overweight vehicles.	Chief, Division of Traffic Operations, Truck Services	Deputy Chief, Division of Traffic Operations, Truck Services
16	Coordinate and provide mutual aid to Regional Transportation Planning Agencies, Metropolitan Planning Organizations, and other government agencies to maintain their essential functions.	Deputy Director, Planning and Modal Operations	Chief, Division of Transportation Planning
17	Process vendor and government agencies' payments timely and accurately.	Deputy /CFO	Chief, Division of Accounting
18	Collect all disaster moneys owed to State DOT, including Federal funds	Deputy /CFO	Chief, Division of Accounting
19	Maintain the network (e.g. Email) infrastructure and software (e.g. CAD, GIS, MS Office Suite) systems.	Deputy/ CIO	Chief, Networks
20	Oversee district management of ongoing construction projects (e.g. financial, project oversight, safety, project process, supervision)	Deputy Director for District Operations	Manager, District Operations
21	Pay employees and maintain leave and benefits systems.	Deputy Director, Administration	Chief, Division of Human Resources
22	Facilitate non-emergency contracts and procurement.	Deputy Director, Administration	Chief, Division of Procurement
23	Acquire and distribute non-emergency goods and services.	Deputy Director, Administration	Chief, Division of Procurement

#	Essential Functions	Key Positions	Successors
24	Ensure the safety of general aviation airports and helipads within the State	Deputy Director, Planning and Modal Programs	Chief, Division of Aeronautics

Delegations of Authority

Situations requiring the activation of the COOP/COG plan will also likely require a temporary suspension or alteration of some of State DOT's administrative procedures in order to support the essential functions. State DOT uses the NIMS organization structure to manage delegations of authority, and outlines procedures for exercising emergency authority to respond to an event. State DOT Director's Orders embody many of the delegations of authority within the chain of command.

Delegation of Authority

[Maintenance Division
 Division of Budgets
 Division of Rail
 Division of Transportation Planning
 Administration
 Accounting
 Design
 Division of Mass Transportation
 Division of Construction
 Right of Way and Land Surveys/Planning & Management
 Division of Aeronautics
 Project Management
 Division of Local Assistance
 Finance
 Division of Environmental Analysis]

Devolution

In some cases, executive leadership will be directly impacted by an emergency, preventing them from carrying out their duties. In these cases, the lines of succession may not be adequate to continue to carry out State DOT's essential functions. In this event, the COOP/COG Branch Director will temporarily assign responsibility and grant authority to carry out essential functions to the existing management team at the pre-determined alternate worksites.

In some emergencies the Headquarters staff may be unable to acquire the equipment or space to carry out some of the essential functions. In that case the COOP/COG Branch Director may request that a District assume one or more

essential functions until an appropriate space can be acquired or the equipment can be obtained. COOP/COG Emergency Relocation Group staff members may have to temporarily move to another District, in that case, to maintain the essential functions.

Large Districts such as [District X, District Y and District Z] would be the most likely to be able to support devolution during a COOP event.

8-3: Notification Procedure/ Phone Tree

Individual/Organization to be Notified:	To be Notified By:
<p><i>Chief of Emergency Management/Homeland Security</i></p> <p><i>Or</i></p> <p><i>HQ EOC Director</i></p> <p><i>Or</i></p> <p><i>HQ Communication Center Dispatcher</i></p>	<p>INITIAL notification:</p> <p><i>State Emergency Management Agency</i></p> <p><i>State Flood Control Agency</i></p> <p><i>State Highway Patrol</i></p> <p><i>Effected State DOT District</i></p>
<p><i>Department Director, or</i> <i>Department Emergency Management/Homeland Security Office Chief, or</i></p> <p><i>HQ EOC Director</i></p>	<p><i>First Person Notified</i></p> <p><i>(e.g., EM/HS Chief, HQ EOC Director, HQ Comm Dispatcher)</i></p>
<p><i>em/hs Office Staff</i></p>	<p><i>em/hs Chief</i></p>
<p><i>all EOC staff needed to report to hq EOC based on the magnitude of the incident</i></p>	<p><i>hq eoc Director Or Designee</i></p>
<p><i>Any staff needed for expertise or immediate support to the EOC</i></p>	<p><i>hq eoc Director Or Designee</i></p>
<p><i>Chief Deputy Director</i></p> <p><i>Governor</i></p>	<p><i>Department Director</i></p>
<ol style="list-style-type: none"> <i>1. Chief Of Staff</i> <i>2. Public Information Officer</i> <i>3. Deputy Director, Planning And Modal</i> <i>4. Deputy Director, Maintenance & Operations</i> <i>5. Deputy Director, Engineering</i> <i>6. Deputy Director/CFO</i> <i>7. Deputy Director, Administration</i> <i>8. Deputy Director, Information Technology</i> 	<p><i>Chief Deputy Director</i></p>

Individual/Organization to be Notified:	To be Notified By:
<ul style="list-style-type: none"> 9. Deputy Director For District Operations 10. Legal Adviser 11. Audits & Investigations Officer 	
Public Affairs Staff	Public Information Officer
<ul style="list-style-type: none"> 1. Transportation Planning 2. Mass Transportation 3. Local Assistance 4. Rail 5. Aeronautics 6. Regional Affairs 	Deputy Director, Planning And Modal
<ul style="list-style-type: none"> 1. Maintenance 2. State Bridge Maintenance Engineer 3. Office of Radio 4. State Bridge Engineer 5. Equipment 6. Research and Innovation 7. Traffic Operations 8. Oversized Vehicles 9. North Region Permits 10. South Region Permits 	Deputy Director, Maintenance & Operations
<ul style="list-style-type: none"> 1. Design 2. Construction/Contracting 3. Right Of Way/ Real Estate 4. Environmental 5. Structures 6. Material Engineering & Testing Services 7. State Bridge Engineer 8. Project Management 	Deputy Director, Engineering
<ul style="list-style-type: none"> 1. Budgets 2. Programming 3. Accounting 	Deputy Director/CFO
1. Business, Facilities, & Security	Deputy Director, Administration

Individual/Organization to be Notified:	To be Notified By:
<ul style="list-style-type: none"> 2. <i>Business Services</i> 3. <i>Labor Relations</i> 4. <i>Training</i> 5. <i>Human Resources</i> 6. <i>Procurement & Contracts</i> 7. <i>Procurement & Warehouse</i> 	
<ul style="list-style-type: none"> 1. <i>Network Operations</i> 2. <i>Enterprise Applications</i> 3. <i>Program/Project Management</i> 	<i>Deputy Director, Information Technology</i>
<i>Each District Director</i>	<i>Deputy for District Operations</i>
<ul style="list-style-type: none"> 1. <i>District Deputy Director, Maintenance & Operations</i> 2. <i>District Region Manager</i> 3. <i>District TMC Manager</i> 4. <i>Other Key District Staff</i> 	<i>Each District Director</i>

Relocation

The ERG will evaluate the impacted facilities and determine if it is necessary to relocate staff to an alternate facility to ensure the continued delivery of all State DOT’s essential functions. This decision shall be coordinated with the COOP/COG Director and the EOC Director.

Non-ERG staff will be provided guidance regarding the need to report to work depending on the nature of the event. All staff will be asked to check in periodically for updates on the State DOT internal communication system regarding the status of the emergency and the need to return to work. The COOP/COG Director will provide this information to the EOC Director as part of his presentation during each Action Planning Briefing.

Non-ERG staff may be assigned telework in support of the State DOT essential functions if support systems are available. They may also be assigned as relief for ERG members.

PHASE II: ALTERNATE FACILITY OPERATIONS

Using the NIMS structure the arrival and operations procedures will be handled by the COOP/COG Director with direction from the EOC Director, as applicable, depending on the event.

Continuity Locations

If an event requires both inward and outward response the Department will give priority allocation to those facilities needed to respond to outwardly focused events. The COOP/COG Branch will locate at the next closest facility not impacted by the event.

Three Department facilities have been identified as continuity locations for performing on-going essential functions in the event of an emergency condition. Table 8.4: Continuity Facilities provides additional information on their locations. Additionally, Annex E provides applicable maps to the facilities and evacuation routes from the primary facility.

Table 8-4: Continuity (Alternate) Facilities

Primary	Alternate	2 nd Alternate	3 rd Alternate
Headquarters Complete street address, phone number	Title of alternate building, e.g. Training Center, complete street address, phone number	Title of alternate building, e.g. Building X, complete street address, phone number	Title of alternate building, e.g. Building Y, complete street address, phone number

Mission Critical Systems & Equipment

State DOT has prepared a preliminary analysis of mission critical systems and equipment in Table 10-1: Mission Critical Systems and Equipment for State DOT. Many of these systems are covered in the existing IT Disaster Recovery Plan which identifies detailed information of the mission critical systems for State DOT.

Vital Files, Records, and Databases

State DOT has prepared a preliminary analysis of vital files, records, and databases, presented in Table 8-5: Vital Files, Records, and Databases. Many of these items are covered in the Disaster Recovery Plan, which identifies detailed information on the vital files, records and databases for State DOT.

[Deputy Directive 89] defines State DOT's policy for identifying confidential and sensitive data and safeguarding such items.

Table 8-5: Vital Records and Databases

Note: State DOT Disaster Recovery Plan is an adjunct to the COOP

Vital File, Record, or Database	Form of Record (e.g., hardcopy, electronic)	Pre-positioned at Alternate Facility	Hand Carried to Alternate Facility	Backed up at Third Location	Maintenance Frequency
Emergency Operations Plans: COOP, EOP, DRP	Hardcopy Electronic				
As-builts, State DOT under construction	Hardcopy Electronic				
As-builts, DOT leased facilities	Hardcopy Electronic				
As-builts of the Department state-owned facilities	Hardcopy Electronic				
As-builts of current projects	Scan/Microfilm				
City, County Bridge Plans	Electronic				
Cooperative Agreements	Hardcopy Microfilm				
FADS Data Base highway account cash mgmt	Electronic				
Deeds of Owned Properties, HQ	Hardcopy				
Employee Personnel Records	Hardcopy				

Vital File, Record, or Database	Form of Record (e.g., hardcopy, electronic)	Pre-positioned at Alternate Facility	Hand Carried to Alternate Facility	Backed up at Third Location	Maintenance Frequency
Employee Emergency Notification Forms	Electronic Hardcopy				
Encroachment Permits	Electronic Hardcopy				
Equipment Inventory Data Base	Electronic				
Bridge Seismic Review Records	Hardcopy				
Supporting Documents for Vendor Payments	Hardcopy				
Procedure Manuals and documentation for Division of Accounting	Hardcopy Electronic				
Records held by HQ EM/HS office	Hardcopy				
Installation CDs for operating systems	Compact Disc				
Confidential Files re accidents	Hardcopy				
Photo Log (Video Camera System)	Laser Disc Electronic				

Vital File, Record, or Database	Form of Record (e.g., hardcopy, electronic)	Pre-positioned at Alternate Facility	Hand Carried to Alternate Facility	Backed up at Third Location	Maintenance Frequency
Purchase Estimate Files (in case of litigation, cannot be reconstructed)	Hardcopy				
Procedures Manual and documentation for Div of Accounting	Hardcopy Electronic				
Phone/Fax key contacts list for External Affairs	Hardcopy Electronic				
Master Fund Transfer Agreements	Hardcopy				
Index of where data is stored for goods movement – specialized service files (mutual aid for RTPA, MTOs)	Hardcopy Electronic				
Imaging system for past payments, work in progress (supports debt collection)	Electronic				
FCC Licenses (maintain telecommunications)	Original documents				

Continuity Communications

The communications systems used to support State DOT's critical functions under normal operating conditions may become unavailable with relocation to a continuity facility.

When the traditional means of communication (primarily telephone service provided by AT&T and Email communications) becomes unavailable, State DOT has developed alternate communications procedures as documented in the Emergency Operations Plan.

Continuity communications provide:

- Capability commensurate with State DOT essential functions
- Ability to communicate with essential personnel
- Ability to communicate with other agencies, organizations, and customers
- Access to data and systems
- Communications systems for use in situations with and without warning
- Ability to support COOP operational requirements
- Ability to operate at the alternate facility within 12 hours, and for up to 30 days
- Interoperability with existing field infrastructures

Table 10-2 documents the communications required to support State DOT's essential functions.

Human Capital

State DOT recognizes the vital role that employees (human capital) have in COOP/COG. State DOT's employees are essential resources that must be safeguarded in the case of an emergency. Strategies for safeguarding human capital include disaster preparedness training for employees, protecting worksites, and adequately equipping continuity worksites. In order to continue the delivery of essential functions, some of the employees may need to be transferred to backup locations from both unaffected and affected areas. Employees to be transferred will depend on the nature of the incident, the skills and abilities required, and will include essential staff as identified by the COOP/COG Branch Director using the existing NIMS structure. Staff will be transferred using existing State DOT vehicles, personal vehicles or vehicles in collaboration with State EMA, State Highway Patrol, or other first responders, as necessary. Additionally, each division and district is responsible for maintaining emergency contact information for employees for use in the event of an emergency.

PHASE III: RECONSTITUTION OPERATIONS (ORDERLY CESSATION, RETURN TO NORMAL OPERATIONS)

This phase is initiated once State DOT's leadership or successors determine that reconstitution operations for returning to normal operations can be initiated. The COOP/COG Director will determine the timeline for reconstitution depending on the nature and scope of the emergency and its impact upon State DOT's facilities, equipment, and personnel. This will entail movement of all personnel from the continuity facility back to headquarters, or to a new operating site, if necessary. In the event that the Headquarters facility is destroyed, Business, Facilities and Security will work with the State General Services to obtain a long term replacement facility, and a temporary facility for a transition, if needed.

State DOT Director, Chief Deputy Director or successor will notify all State DOT elements, including non-emergency personnel, that the emergency and or threat no longer exist. Personnel will be notified through departmental notification systems. A time- phased, priority-based approach will be used in which the most critical functions will be transferred last. Those functions which were discontinued because of the emergency will be restored first.

Resumption Actions

- Chief, Office of Management Services in the Division of Maintenance will ensure that adequate and redundant power is available at the primary facility or new location.
- COOP COG Supervisor will inform State EMA Operations Center, [Agency] and other essential organizations of the return to normalcy, and primary location or new facility.
- Division of Administration will resume essential building operations, maintenance and security, and notify vendors.
- Chief Information Officer, Information Technology will validate that all systems are operational and restored, and that connectivity with Districts is in place.
- Chief, Office of Radio Communication in the Division of Maintenance will validate the status of radio, cellular, satellite and CENTREX/PBX systems; vendors and telecommunications for contacts with [Agency,] State EMA and key organizations. Any repairs to the communication system will be coordinated with State General Services, Telecommunications division.

The EOC Director and COOP/COG Branch Director will jointly conduct an after-action review of the effectiveness of the COOP/ COG Plan during the incident, identifying areas for improvement, and then develop a remedial action plan as soon as possible following reconstitution.

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9. COOP/COG PLANNING RESPONSIBILITIES

The primary responsibility for creation and maintenance of the COOP/COG plan has been assigned to the State DOT Office of Emergency Management and Homeland Security, which will manage the development of plans based on direction from State EMA, [Business, Transportation, and Housing Agency] and senior State DOT leadership.

Table 9-1 lists the key positions and descriptions of responsibilities.

Table 9-1: Key Positions & Description of Responsibilities:

Key Positions	Description of Responsibilities
Director	Approve COOP/COG Plan
Chief Deputy	Delegates COOP/COG management and planning responsibilities
Chief, Office of Emergency Management/Homeland Security	Ongoing COOP/COG management and planning
State DOT Steering Committee	Oversight of COOP/COG maintenance process

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10. LOGISTICS

CONTINUITY LOCATION

State DOT can leverage its current distributed operations model using existing District and Field Offices as alternate locations for Headquarters as EOC facilities or alternate essential functions sites. Continuity location facilities are capable of sustaining operations of both the EOC and the COOP/COG ERG in emergency situations.

All of State DOT's transportation management centers, headquarters and district offices, and maintenance facilities have auxiliary power generators to provide electricity and have adequate heating and air conditioning. Several of these facilities are also equipped with kitchens capable of preparing meals for large numbers of people.

In an emergency, the facilities are linked by computer, telephone, radio, or a combination of each to provide communication. State DOT will give priority allocation to the ERG to perform the identified essential functions in category A. Should relocation be required in an emergency, the COOP/COG team including the ERG will locate at the closest facility not impacted by the event. Co-location with the EOC is highly desirable.

Continuity facilities should provide:

- Sufficient space and equipment
- Capability to perform essential functions within 12 hours and up to 30 days
- Reliable logistical support, services, and infrastructure systems
- Consideration for health, safety, and emotional well-being of personnel
- Continuity communications
- Computer equipment and software

The COOP/COG Program Management Team will evaluate the need to pre-stage equipment, materials, and vital records at alternate work sites. The identification and requirements will be refined based on scenario driven test and training.

MISSION CRITICAL SYSTEMS & EQUIPMENT

State DOT has prepared a preliminary analysis of mission critical systems and equipment. Many of these systems are covered in the existing IT DRP and EOP which identifies detailed information of the mission critical systems for the Department. The IT DRP and EOP and other plans will be continuously evaluated and updated along with the COOP/ COG mission critical systems and

equipment to support essential functions as part of the COOP/COG testing and evaluation program.

Table 10-1: Mission Critical Systems & Equipment

Note: this is a list of typical systems and equipment. Each user agency should customize and complete the list and include the appropriate primary and alternate locations to be accessed in a COOP/COG event.

System or Equipment Name	Current Location	Other Locations
A & E Database	Server	
Accounting software	Server	
Arcview	HQ	
Asset Management Inventory	Server	
Asset Management System	Servers, [other specific location]	
Authentication / Authorization	HQ	
Automated Traffic Management System (ATMS)	Server	
Bridge Inspection Information	Server	
Bridge Standards and Inspection Records	Server	
CAD/CAMM	Server	
CADD	Server, [other specific locations]	
Construction Administration System	[specific location]	
Contracts Database	HQ	
Copy Machine	HQ	
Encroachment Permit Database	Server	
Engineering Estimating System	Mainframe, [other specific locations]	
Equipment Database	HQ	

System or Equipment Name	Current Location	Other Locations
Extra Work Bill	Intranet, [other specific location]	
Facility Project Files	HQ	
Fax	HQ	
File and Print Services	HQ	
FileMaker Pro – Master Status	Workstation	
Fleet Management Equipment Order	Server	
GIS – UNIX	Server	
Grants Database	Server	
Identity Management Services	HQ	
Integrated Rights of Way System (IRWS)	[specific location]	
Intranet	HQ	
Links to State GSA Contracts Register	Internet	
Lane Closure	HQ	
Lease Database	HQ	
Mainframe	[specific location]	
Microsoft Office	Workstation	
Operating Engineers Database	Server	
Oracle	Server	
Parking	Server	
PCs, Windows-based	HQ; [number available for use at each COOP/COG continuity facility]	
Permits Database	HQ	
Photo Log	HQ	
Portable Communications Trailers	[Primary storage location]	[Alternate storage locations]

System or Equipment Name	Current Location	Other Locations
Position Tracking Database	[storage location]	
Procurement Database	Server	
Project Information Reporting	Server/PC	
Property Management	[specific location]	
Real Property Inventory	Server	
Records Management Database	Server	
Routers	HQ	
State DOT Internal Communication System	Server	
State DOT Network, LAN	HQ	
State DOT Website	Server	
Server (operating software packages)	Server	
Sign Log	HQ	
Specialty Databases	Server	
State Highway Inventory	HQ	
Switches	HQ	
Time Reporting System	HQ	
Transportation Management Center Systems	HQ	
Traffic Forecasting Software	District	
Toll Collections Records	District	
Utility Location Database	Server	
Warehouse Management Program	Server	
Work Order System	Server	
Workers Compensation files	HQ	

CONTINUITY OF COMMUNICATIONS

State DOT has performed an analysis of communications systems necessary to support the essential functions at alternate sites. The majority of these systems are covered in the Disaster Recovery Plan and Emergency Operations Plan, which identifies detailed information of the communications systems for the Department. See Table 10-2.

Table 10-2: Continuity of Communications

Communications System	Current Provider	Services Provided	Emergency Services	Alternate Providers or Modes
Personal Digital Assistants				
Two-Way Land Mobile Radio Communications; 800 MHz Radios				
State DOT Auxiliary Radio System				
Cellular Phones				
Emergency Satellite Telephone System				
Email				
State Emergency Management Agency alternate communications system				
Public Telephone Systems				

VENDORS & OTHER AGENCY FUNCTIONS

Program managers will notify all supporting vendors and agencies, as applicable, of the activation of alternate locations and direct support to the new facility, if appropriate. Historically State DOT has multiple vendors readily available, which includes but is not limited to [Certified State Multiple Awards Schedule (CMAS).] Table 10-3: Vendors and Other Agencies includes some of the supporting vendors and agencies identified as necessary for supporting State DOT's delivery of essential functions at a continuity facility.

Table 10-3: Vendors & Other Agency Functions

Name of Vendor or Supporting Agency	Description of Product or Service	Which Activity or Task Does this Vendor or Supporting Agency Support?	RTO	Can this Vendor or Agency Satisfy RTO?	Alternate Providers or Modes
AAA Transport	Equipment Repair	Implement emergency repairs of equipment and facility			State contracts, Yellow Pages Local Vendors
A Provider	Data Circuits	Network Connectivity	0-24 hours	Yes	
A Provider	Internet and landline phone service	Communications, Internet, Video Conferencing	24	Yes	
B Networks, Inc.	Software and Hardware Maintenance of SPAM Filtering	SPAM Filtering and Prevention Outside the Department Infrastructure			State contracts, Yellow Pages, Local Vendors
C Services	Maintenance of critical equipment	Network Connectivity	24 hours	Yes	State contracts, Yellow Pages,
C Services	Software	Network Monitoring	24 hours	Yes	Local Vendors

Name of Vendor or Supporting Agency	Description of Product or Service	Which Activity or Task Does this Vendor or Supporting Agency Support?	RTO	Can this Vendor or Agency Satisfy RTO?	Alternate Providers or Modes
DBA Heating	Heating, A/C				
GSA and Current Hazardous Material Vendor	Building Hazard Analysis	Building review	24 hours	Yes	State contracts, Yellow Pages, Local Vendors
GSA	Building operations and maintenance	Building operations and maintenance	2-4 hours	Yes	
H Provider	Software	Network Monitoring	24 hours	Yes	
H Provider	Database & Application support	Server Support	0-24 hours	Yes	
I Provider	Application software maintenance	All Desktop and Server Software			
IAB Provider	Enterprise Storage	SAN Storage	0-24 hours	Yes	
N Provider	Product Support	Identity Management	24 hours	Yes	
NM Provider	File and Print Services	File and Print Services	48 hours	Yes	

Name of Vendor or Supporting Agency	Description of Product or Service	Which Activity or Task Does this Vendor or Supporting Agency Support?	RTO	Can this Vendor or Agency Satisfy RTO?	Alternate Providers or Modes
NM Provider	Directory Services	Directory Services	24 hours	Yes	
NML Provider	Operating System Support	Operating System Support	24 hours	Yes	
P Provider	Various emergency goods	Essential goods			State contracts, Yellow Pages, Local Vendors
PAB Provider	Equipment Repair	Implement emergency repairs of equipment and facility			
RPM Provider	PDA and server maintenance	Email Delivery vendor			
S provider	Cellular & Data Communications	Field Communications			
State Highway Patrol	Security	Security	2-4 hours	Yes	
SV Provider	DNS Services DHCP Services	Network Connectivity	4-24 hours	Yes	
SV Provider	Database & Application Services	Enterprise Server support	4-24 hours	Yes	

Name of Vendor or Supporting Agency	Description of Product or Service	Which Activity or Task Does this Vendor or Supporting Agency Support?	RTO	Can this Vendor or Agency Satisfy RTO?	Alternate Providers or Modes
SY Provider	Server Software support	Backups, File systems	2-24 hours	Yes	
TM Provider	Software Maintenance of Anti-Virus Protection	Anti-Virus Protection at Mail Servers			
XYZ Provider	Cellular & Data Communications	Field Communications	4-24 hours	yes	

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11. TEST, TRAINING, AND EXERCISES

Even though State DOT has extensive experience in responding to system disruptions that resulted from fire, flood, earthquake, hazardous materials spills and other causes, it still believes strongly in continuous training. State DOT regularly participates in emergency management exercises with federal, state, and local agencies, including annual exercises [like Golden Guardian and Silver Sentinel]. State DOT reviews its responses and creates After Action Reports and improvement matrices to guide future training, exercises and facility development.

The ERG is receiving additional training, and guidance document development is underway. All districts have received EOC/NIMS training, and basic ICS/NIMS training is offered several times each year [via video teleconference] to every district.

Table 11-1: Annual Training/Exercise Plan ICS/NIMS/COOP

When	Event	Attendees	Length	Times
February	<i>ICS/NIMS VTC</i>	All State DOT staff without a certificate	2.5 hrs	2
April	<i>COOP Seminar/ Review</i>	All senior management, ERT	2.5	1
	* catastrophic focus			
	* VTC presentation			
June	<i>Tabletop Exercise</i>	Senior management, ERT together	2.5	1
	* catastrophic focus			
	* conducted at each district			
	* AAR and Improvement Plan to identify <i>training</i> deficiencies			

When	Event	Attendees	Length	Times
	* Include evaluation of plan and equipment needs			
Fall	<i>Functional</i>	Senior management and ERT	3	1
	* emergency focus	* separated into Policy Group and ERT deployment		
	*each district			
	*AAR and Improvement Plan for <i>system</i> deficiencies			

12. MULTI-YEAR STRATEGY, PROGRAM MANAGEMENT PLAN AND BUDGET

A functional COOP/COG plan is the result of development, maintenance, and an annual review of organization's COOP/COG capabilities. State DOT is committed to an ongoing COOP/COG training program that will result in a COOP/COG capability that meets all State and Federal requirements and is in the best interest of State DOT and its employees, while:

- Ensuring the performance of essential functions/operations
- Supporting State and national essential functions
- Reducing loss of life, minimizing damage and losses
- Executing as required, succession to office with accompanying authorities, in the event a disruption renders agency leadership unable, unavailable, or incapable of assuming and performing their authorities and responsibilities of office
- Reducing or mitigating disruptions to operations
- Ensuring that continuity facilities are available and functional. Protecting essential facilities, equipment, vital records, and other assets
- Achieving a timely and orderly recovery from a COOP situation and maintenance of essential functions to both internal and external clients
- Achieving a timely and orderly reconstitution from an emergency, and resumption of full service to both internal and external clients
- Ensuring and validating COOP readiness through a dynamic, integrated test, training, and exercise program to support the implementation of COOP plans and programs

COOP/COG Plan Maintenance

The primary responsibility for creation and maintenance of the COOP/COG plan has been assigned to State DOT Office of Emergency Management and Homeland Security (EM/HS). EM/HS will manage the Testing, Training and Evaluation of plans, and continue to revise and develop the plans based on feedback captured through Testing, Training, and Exercises, as well as actual experience using the plan in conjunction with the State DOT Emergency Operations Plan. The schedule for the annual cycle is found in Table 11-1 in the previous chapter.

An annual review of the plan will be undertaken by EM/HS personnel. Appropriate revisions will be proposed to the Director for final approval. The annual self-evaluation checklist for State EMA will be completed and submitted to State EMA by the required date each year, as required in the Schedule published by State EMA.

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ANNEX A: Authorities And References

Continuity Assistance Tool (CAT), July 2009.

Continuity Guidance Circular 1 for Non-Federal Entities (CGC-1), FEMA, January 21, 2009.

Continuity Guidance Circular 2, Continuity Guidance for Non-Federal Entities: Mission Essential Functions Identification Process (CGC 2), FEMA, July 22, 2010.

Continuity of Operations (COOP) Planning Guidelines for Transportation Agencies. NCHRP Report 525, volume 8/ TCRP, Report 86, volume 8. Washington, D.C.: Transportation Research Board, Transit Cooperative Research Program and National Cooperative Highway Research Program.

Federal Continuity Directive (1), (FCD-1), February 2008.

Federal Continuity Directive (2) (FCD-2) February 2008.

Federal Preparedness Circular-65 (FPC-65), June 2004.

National Security Presidential Directive 51/Homeland Security Presidential Directive 20, National Continuity Policy, (NSPC-51/HSPD-20), May 2007.

[Executive Order S-04-06, April 2006.]

[Governor's Executive Order W-9-91.]

[State Continuity Planning Guidance and Plan Template, date.]

[State Catastrophic Incident Base Plan: Concept of Operations, date.]

[State DOT Emergency Operations Plan, State DOT Guidelines for Response to National Terrorist Threat Levels, May 2004.]

[State DOT IT Disaster Recovery Plan, 2010.]

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ANNEX B: Operational Checklists

COOP/COG Branch Director

Note: checklists for the individual positions within the Emergency Relocation Group (ERG) will be developed in consultation with the ERG members based on exercises.

- Notify all COOP/COG personnel of the activation.
- Alert the ERG and direct them to the Continuity Facility.
- Assess communication capabilities, and fill any deficiencies
- Ensure the security of the continuity facilities
- In conjunction with the EOC Safety Officer and Logistics Section Chief, ensure availability of billeting, transportation, and food service for the continuity facility to support the COOP/COG staff
- Brief the Director, Chief Deputy Director and Deputy Director for External Affairs on maintenance of essential functions, COOP/COG activities, status, and current situation as soon as possible
- Establish a system to track and record staff time.
- In conjunction with the EOC Logistics Section Chief, ensure that the State DOT [Highway Information Network] is operational and that the current highway conditions are updated in a timely manner.
- The ERG will prepare administrative support elements of the essential functions list, such as establishing Project IDs, providing for personnel resources and having cash advances processed.
- In fulfillment of the essential functions related to highways, develop cost estimates that will be used for Federal Emergency Management Agency (FEMA) and Federal Highway Administration (FHWA) funding requests
- In coordination with the EOC Director, respond to requests for COOP/COG-related information from the legislature, inquiries from the Governor's office, State EMA, and others.
- Develop a 24-hour staffing schedule with two 12-hour shifts for the COOP/COG Branch.
- Deactivate the continuity facility when reconstitution is complete.
- Upon deactivation of the continuity facility, participate in the After Action Meeting, and provide information for the After Action Report.

EOC Director

Note: The EOP contains the complete checklist set for the EOC positions. This checklist highlights areas of interface between the EOC and the COOP/COG Branch.

- Establish the NIMS organization, appoint the Safety Officer, PIO, Liaison Officer, Section Chiefs and assign responding personnel to appropriate sections within the EOC.
- When the event is recognized as a COOP/COG event, activate the COOP/COG Branch.
- Coordinate information and support with the COOP/COG Branch Director, who will attend Action Planning meetings in the EOC.
- In conjunction with the Safety Officer and Logistics Section Chief, staff the EOC at the appropriate level for 24 hours each day, using a 12 hour shift rotation schedule.
- Brief the Director, Chief Deputy Director and Deputy Director for External Affairs on emergency response activities, status, and current situation as soon as possible.
- Assess communication capabilities and augment as needed in conjunction with the Logistics Section Chief.
- Ensure the security of the EOC.
- Ensure availability of billeting, transportation, and food service, if necessary.
- Track and record staff time.
- When requested, direct State DOT representative to the Liaison Officer in the State Operation Center (SOC) [or Regional Emergency Operations Center (REOC)].
- Maintain communications with District(s) EOC and ensure necessary support is available.
- Coordinate resource requests between affected District(s) and unaffected District(s).
- Plan for staff call out to ensure that the EOC is properly staffed and supplied for the duration of the activation.
- The Planning/Intelligence Section Chief will provide timely damage assessment and situation analyses to key management personnel and State EMA.
- Develop overall strategies for responding to the emergency.
- In coordination with the Policy Group, respond to requests for emergency-

related information from the legislature, inquiries from the Governor's office, State EMA, and others.

- Through the PIO, provide coordinated and centralized dissemination of information to employees and the media.
- Ensure that politically sensitive requests, offers of assistance and/or requests or inquiries directed to State DOT from the Governor's Office or other executive or legislative branch entities are handled properly and efficiently.
- In coordination with the Policy Group, respond to the Agency's, Governor's, and Legislators' concerns and requests.
- Deactivate the EOC when the emergency is over.
- Upon deactivation of the EOC, lead the After Action Meeting, and provide information for the After Action Report.

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ANNEX C: Essential Functions List

Table 6-1: Prioritized Essential Functions

#	State DOT Operating Unit	Essential Functions	Priority (A, B, C)	State Essential Function	PMEF ⁶	MEF ⁷
1	Director/ Chief Deputy Director	Direct State DOT emergency response and recovery efforts; order activation of COOP/COG; activation of continuity facilities; support the State emergency response effort; ensure State DOT's coordination with local and Federal response agencies	A	X	X	
2	Director/ Chief Deputy Director	Perform oversight of essential maintenance elements for State Highway System (SHS)	A	X	X	X
3	Director/ Chief Deputy Director	Oversee response to emergency situations that affect the safety and operation of the State Highway System.	A	X	X	
4	Public Information	Provide transportation system information to government entities, private sector and general public.	A	X	X	
5	Administration/ Business, Facilities & Security	Emergency worksite hazard analysis	A			X

⁶ Primary Mission Essential Function, Federal Continuity Directive 2010

⁷ Mission Essential Function, Federal Continuity Directive 2010

#	State DOT Operating Unit	Essential Functions	Priority (A, B, C)	State Essential Function	PMEF ⁶	MEF ⁷
6	Director/ Chief Deputy Director	Activate COOP, continuity site, evacuate, shelter in place	A			X
7	Administration/ Procurement	Facilitate emergency contracts and procurement.	A	X	X	
8	Administration/ Procurement	Acquire and distribute emergency goods and services.	A	X	X	
9	Administration/ Business, Facilities & Security	Provide essential building operations and maintenance and security.	A			X
10	Deputy Director-CFO	Safeguard the funds collected.	A	X	X	
11	Director/Chief Deputy Director	Provide timely and accurate reporting (Legislative, Financial) to address State DOT's business needs.	A	X	X	
12	Maintenance and Operations/ Radio	Maintain the telecommunications infrastructure.	A	X	X	
13	Maintenance and Operations/ Bridge	Inspect bridges.	B			X
14	Emergency Management/ Homeland Security	Respond to Homeland Security alerts.	A	X	X	

#	State DOT Operating Unit	Essential Functions	Priority (A, B, C)	State Essential Function	PMEF ⁶	MEF ⁷
15	Maintenance and Operations/ Traffic Operations- Truck Services	Issue transportation permits for oversized/overweight vehicles.	A	X	X	
16	Deputy Director, Planning & Modal	Coordinate and provide mutual aid to Regional Transportation Planning Agencies, Metropolitan Planning Organizations.	B			X
17	Deputy Director/CFO	Process vendor and government agencies' payments timely and accurately.	A			X
18	Deputy Director/CFO	Collect all disaster moneys owed to State DOT, including Federal funds	A	X	X	
19	Deputy Director/ IT	Maintain the network (e.g. Email) infrastructure and software (e.g. CAD, GIS, MS Office Suite) systems.	A	X	X	
20	Deputy Director for District Operations	Oversee district management of ongoing construction projects (e.g. financial, project oversight, safety, project process, supervision)	B			X
21	Administration/ Human Resources	Pay employees and maintain leave and benefits systems.	B			X

#	State DOT Operating Unit	Essential Functions	Priority (A, B, C)	State Essential Function	PMEF ⁶	MEF ⁷
22	Administration/ Procurement	Facilitate non-emergency contracts and procurement.	C			
23	Administration/ Procurement	Acquire and distribute non-emergency goods and services.	C			
24	Deputy Director, Planning & Modal Programs	Ensure the safety of general aviation airports and helipads within the State	B			X

ANNEX D: Continuity Facility Identification (Headquarters Only)

Table 8-4: Continuity (Alternate) Facilities

Primary	Alternate	2 nd Alternate	3 rd Alternate
Headquarters complete street address, phone number	Title of alternate building, e.g. Training Center; complete street address, phone number	Title of alternate building, e.g. Building X; complete street address, phone number	Title of alternate building, e.g. Building Y; complete street address, phone number

Basic facility requirements include:

- Sufficient space and equipment, appropriate security and access controls.
- Capability to perform essential functions within 12 hours or sooner, and for up to 30 days.
- Reliable logistical support services, and infrastructure systems, including water, electrical power, sanitation, heating and air conditioning.
- Human needs considerations—safety, health, and rest facilities.
- Continuity communications.
- Necessary hardware, software and compatible computers.

Given the nature and diversity of the threat environment it would be difficult to identify an alternate facility capable of surviving every hazard. The COOP team will exercise discretion in determining which particular facility to activate, and under which threat condition(s).

The specific needs of the COOP/COG Branch when deployed can best be determined through realistic exercises in which the COOP/COG Branch and ERG are subjected to realistic decision-making scenarios; testing the inflow and outflow of information; the availability of critical reference materials; and needed critical information technology.

Exercises will also identify whether or not the ERG can respond to emergency tasking from multiple sources, including internal State DOT elements, [Agency,] the State emergency response and recovery community, and the Federal Government. As the State element of Federal Emergency Support Function #1 (ESF #1) Transportation, State DOT provides essential services and critical infrastructure on which much of the emergency response and recovery depends.

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ANNEX E: Maps And Evacuation Routes

This section of the plan should have a map demonstrating various evacuation routes from the headquarters facility. It should have area maps for each of the three selected continuity facilities that show the freeway access points, major roads that are likely to be opened quickly by local authorities, and the exact location of the continuity facility. Therefore, this annex should consist of four maps.

Maps with driving routes may be easily obtained by an on-line provider by accessing the maps and driving directions, zooming in to the most appropriate scale, and then using the "print screen" command to retrieve the image. State DOTs with cartographers may wish to have customized maps created for the plan.

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ANNEX F: Definitions And Acronyms

Activation—When a COOP plan has been implemented whether in whole or in part.

Automated Data Processing (ADP) equipment—Equipment that performs data processing largely by automatic means.

CAD—Computer Aided Design

CADD—Computer Aided Design and Drafting

Certified State Multiple Awards Schedule—CMAS

Collateral damage—Injury to personnel or damage to facilities that are not the primary target of an attack.

Construction Management System —CMS

Continuity Communications—Systems that enable employees of one organization or agency to talk directly with employees of another organization or agency during a disaster; communications systems that are flexible and can span several functions seamlessly.

Continuity Facility—A prearranged facility, other than the Headquarters facility, which will allow for continuation of mission essential services.

Continuity of Government (COG)—Activities that address the continuance of constitutional governance. COG planning aims to preserve and/or reconstitute the institution of government and ensure that a department or agency's constitutional, legislative, and/or administrative responsibilities are maintained. This is accomplished through succession of leadership, the pre-delegation of emergency authority, and active command and control during response and recovery operations.

Continuity of Operations (COOP)—The activities of individual Departments and Agencies and their sub-components to ensure that their essential functions are performed. This includes plans and procedures that delineate essential functions; specify succession to office and the emergency delegation of authority; provide for the safekeeping of vital records and databases; identify alternate operating facilities; provide for continuity communications; and validate the capability through tests, training, and exercises.

COOP Event—Any event that causes an Agency or Department to relocate operations to a continuity site to ensure continuance of its essential functions.

Critical Infrastructure—Systems and assets, whether physical or virtual, so vital that the incapacity or destruction of such may have a debilitating impact on the security, economy, public health or safety, environment, or any combination of these matters, across any Federal, State, regional, territorial, or local jurisdiction (NIIP 2009).

Critical Infrastructure Protection (CIP)—Actions or measures taken to cover or shield from exposure, injury, or destruction any critical infrastructure element. Protection includes actions to deter the threat, mitigate the vulnerabilities, or minimize the consequences associated with a natural hazard event, terrorist attack or other incident (NIIP 2009).

CTC—Consulting firm that works with State DOT to understand and apply FHWA's financial procedures when handling pooled fund commitments and obligations.

Delegation of Authority—Specifies who is authorized to act on behalf of State DOT head and other key officials for specific purposes.

Departmental Operations Center (DOC)—An emergency operations center that is discipline-specific

Department of General Services—DGS

Department of Homeland Security (DHS)—The agency of the Federal government that has as its mission to lead the unified national effort to secure America: prevent and deter terrorist attacks and protect against and respond to threats and hazards to the Nation and secure the national borders.

Department of Transportation—DOT

Department of Water Resources—DWR

Devolution—The capability to transfer statutory authority and responsibility for essential functions from an agency's primary operating staff and facilities to other employees and facilities, and to sustain that operational capability for an extended period.

Disaster Recovery Plan—The DRP provides the required organization, communication, and recovery steps necessary to ensure that critical IT applications that support State DOT essential functions are restored within acceptable Maximum Acceptable Outage (MAO) time frames.

is a set of rules used by a communications device (such as a computer, router or networking adapter) to allow the device to request and obtain an Internet address from a server which has a list of addresses available for assignment.

Director's Order—A mechanism used to provide authority and funding to enter into an emergency contract quickly. A Director's Order suspends various formal advertising and bidding requirements in the State Contract Act.

Domain Name System (DNS)—Domain Name System stores and associates many types of information with domain names, but most importantly, it translates domain names (computer hostnames) to Internet Protocol addresses. It also lists mail exchange servers accepting email for each domain.

DriveAwayKit—A kit prepared by, and for, an individual who expects to deploy to a continuity location during an emergency, notably members of the Emergency Relocation Group (ERG). It contains items needed to minimally satisfy personal and professional needs during deployment to a COOP facility to ensure that essential functions can continue to be performed.

Enduring Constitutional Government (ECG)—A cooperative effort among the Executive, Legislative, and Judicial branches of government, coordinated by the President, to preserve the capability to execute constitutional responsibilities in a catastrophic emergency.

Emergency Coordinator—This is the key senior official appointed within an organizational element or higher who serves as the coordinator for all National Response Plan and National Incident Management System COOP related matters.

Emergency Operating Records—Records that support the execution of an agency’s essential functions.

Emergency Operations Center (EOC)—A location from which centralized decisions can be made during an emergency, which brings together key response personnel and mitigate the emergency on behalf of State DOT.

Emergency Operations Plan (EOP)—A comprehensive plan that described the work of the organization to plan for, respond to and recover from a natural or human caused emergency or disaster event.

Emergency Relocation Group (ERG)— A group subordinate to the COOP/COG Branch Director and the EOC Director that is activated at the EOC Director’s direction to ensure that all State DOT’s essential functions continue during the disaster period, with an interruption not to exceed 12 hours, and a duration of at least 30 days. ERG members may be assigned to report to a continuity site, as required, to perform agency essential functions or other COOP/COG related operations.

Essential functions—The limited set of department and agency level government functions that must be continued after a disruption of normal activities. Primary and Mission Essential Functions that enable the government to provide vital services, exercise civil authority, maintain the safety and well being of the general populace, and sustain the industrial/economic base in an emergency. DOT’s functions support state and national essential functions

Executive Agent—A term used to indicate a delegation of authority by a superior to a subordinate to act on behalf of the superior. An executive agent may be limited to providing only administration and support or coordinating common functions or it may be delegated authority, direction, and control over specified resources for specified purposes.

Federal Aid Data System—FADS

Federal Continuity Directives—FCD

Federal Emergency Management Agency (FEMA)—Part of the Department of Homeland Security (DHS), FEMA leads the Federal effort to prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident.

Federal Highway Administration (FHWA)—A division of U.S. DOT. FHWA’s role in the Federal-aid Highway Program is to oversee federal funds used for constructing and maintaining the National Highway System (primarily Interstate Highways, U.S. Routes and most State Routes). FHWA also provides emergency funding for State DOTs following a disaster, and provides disaster response guidance.

HAR—Highway Advisory Radio, sometimes also called travelers’ information stations(TIS), are licensed low power AM radio stations set up by local transportation departments to provide bulletins to motorists and other travelers regarding traffic and other delays.

Headquarters (HQ)—Headquarters Area is defined as all HQ facilities bounded by the X River (North), Some Avenue (East), United States Highway 123 (South), and Z River (West); [address of headquarters building.]

Homeland Security Presidential Directive-5 (HSPD-5)—A directive by President George W. Bush in February 2003 that required all federal agencies to use the National Incident Management System (NIMS). Other entities that wish to receive Federal emergency assistance grants must also comply with NIMS.

Incident Command System (ICS)—The Incident Command System (ICS) provides a common organizational framework within which agencies can work collectively at the scene of an emergency. Its hallmarks are hierarchy, flexibility, adaptability, and common terminology. It is mandated by HSPD-5 as the basis for the National Incident Management System (NIMS).

Interagency Agreements—A written agreement entered into between agencies that requires specific goods or services to be furnished or tasks to be accomplished by one agency in support of the other.

Legal and financial records—Records that are needed to protect the legal and financial rights of the Government and of the persons affected by its actions.

Level III Emergency—Emergencies that require the immediate activation of the full EOC staff. Examples: major earthquakes, regional flooding, and storm damage. Emergency response may be downgraded to a Level II, or I response after full assessment of the nature and extent of the emergency.

Local Area Network (LAN)—A computer network covering a local area, like a home, office, or branch of buildings.

Mission critical systems—Automatic data processing (ADP) equipment essential to supporting the execution of an agency's essential functions.

Mission Essential Function (MEF)—Functions that enable an organization to provide vital services, exercise civil authority, maintain the safety of the public, and sustain the industrial/economic base during disruption of normal operations.

Mutual aid—The provision of supplies and services during time of emergency. Within State DOT mutual aid may be provided or received between districts, or between state agencies.

National Essential Functions—NEF

National Incident Management System (NIMS)—A system mandated by HSPD-5 that provides a consistent nationwide approach for Federal, State, local, and tribal governments management of a multi-agency event; the private sector, and nongovernmental organizations to work effectively and efficiently together, regardless of cause, size, or complexity. NIMS is based on ICS.

Orders of Succession—Provisions for the assumptions of senior agency offices during an emergency by pre-designated individuals in the event that any of the officials is unavailable to execute his legal duties.

Policy Branch—The senior officials of State DOT who relate directly to the governor, the agency secretary and other members of the state's executive branch, and provide information to members of the legislative branch and their staffs. They provide overall policy direction for the management of emergency response and recovery operations, including setting priorities for the use of scarce resources.

Primary Mission Essential Function (PMEF)—Mission Essential Functions which must be performed in order to support the performance of National Essential Functions before, during, and in the aftermath of an emergency. PMEFS need to be continuous or resumed within 12 hours after an event and maintained for up to 30 days or until normal operations can be resumed.

Project Initiation Document (PID)—A logical document whose purpose is to bring together the key information needed to start the project on a sound basis; and to convey that information to all concerned with the project.

Reconstitution—The process by which surviving and or replacement agency personnel resume normal agency operations from the original or replacement primary operating facility.

Recovery—The process of returning to normal operations at the conclusion of an emergency situation.

Recovery Time Objective (RTO)—The period of time which may elapse before Specified essential functions activities are restarted. State DOT recognizes three levels of RTO for planning purposes:

A: RTO not to exceed (24 hours)

B: RTO not to exceed (72 hours)

C: RTO not to exceed (30 days)

State Administrative Manual (SAM)—A reference source for statewide policies, procedures, regulations and information, developed and issued by authoring agencies such as the Governor's Office, Department of General Services (GS), Department of Finance (DOF), and [Department of Personnel Administration]. In order to provide a uniform approach to statewide management policy, the contents have the approval of and are published by the authority of the DOF Director and the GS Director.

State DOT —State Department of Transportation.

State DOT Highway Information Network —A network for communication with employees and the public about road conditions throughout the state. Information is available at [phone number] and [URL].

State EMA—State Emergency Services Agency is the branch of state government that provides leadership to all state agencies and local jurisdictions in all phases of emergency management, and all stages of homeland security. It also provides guidance to State DOT and other state agencies and Executive Branch activities on the development of their COOP/COG Plans.

State Emergency Functions (EF)—The State Emergency Functions are focused activities conducted by a specified branching of state agencies, departments and other stakeholders with similar functional activities whose responsibilities lead to improving the state's ability to collaboratively prepare for, effectively mitigate, cohesively respond to and rapidly recover from any emergency. State Emergency Functions unify a broad-spectrum of stakeholders with various capabilities, resources and authorities to improve collaboration and coordination for a particular discipline. They also provide a framework for the state government to support regional and community stakeholder collaboration and coordination at all levels of government and across overlapping jurisdictional boundaries.

State Operation Center (SOC)— the centralized location from which the state agencies coordinate disaster response and recovery operations.

State Transportation Infrastructure Planning System (CTIPS)—State Transportation Improvement Project System is the single data source for metropolitan planning organizations (MPO) and State Transportation Improvement Program (STIP) data statewide. MPOs and State DOT staffs enter project information for processing with the CTC and FHWA.

Telework—Pre-disaster plans that allow some continuity personnel to fulfill their business functions while at home or at other offsite location.

Test, Training, and Exercises (TT&E)—Measures to ensure that an agency's COOP program is capable of supporting the continued execution of its essential functions throughout the duration of a COOP situation.

Threat Conditions—System developed from the input from the Intelligence and Early Warning Subcommittee of the State Strategic Committee on Terrorism that provides timely warning information for government agencies and the public.

[Traffic Management Center (TMC)—Traffic Management Center is the nerve center for urban freeway and highway systems. Real time information is gathered from many sources such as electronic sensors in the pavement, freeway call boxes, video cameras, 911 calls, officers on patrol, State DOT highway crews, ramp meter sensors, earthquake monitors, motorist cellular calls, and commercial traffic reporters, which is sent to the TMC 24hours a day, seven days a week.]

Virtual Private Network (VPN)—A private network often used within a company, or by several companies or organizations, to communicate confidentially over a publicly accessible network.

Vital databases—Information systems needed to support essential functions during a COOP situation.

Vital Records—Essential agency records that are needed to meet operational responsibilities under national security emergencies or other emergency or disaster conditions (emergency operating records), or to protect the legal and financial rights of the Government and those affected by Government activities (legal and financial rights records).

Wildland Urban Interface Fire (WUI)—A fire that begins in a wildland or forest and spreads into an urbanized area, usually driven by strong winds during a period of low humidity. Such fires are common in the state parks and forests throughout the state.

ANNEX G: About The Authors

FRANCES L. EDWARDS, M.U.P., PH.D., CEM

Frances Edwards is the director of the Master of Public Administration program and professor of political science at San José State University. She is Deputy Director of the DHS NTSCOE of the Mineta Transportation Institute at SJSU, where she is also a Research Associate, and teaches emergency management in the Master of Science in Transportation Management program. Her current research is focused on the continuity of operations process and its relationship to emergency management in transportation organizations. She is also researching issues related to climate change and transportation, and transportation security issues. She is a member of the National Academy of Sciences Transportation Research Board's ABE40 Committee, focused on critical infrastructure security.

Dr. Edwards has recently been guest editor for publications on climate change, and on disaster recovery following Hurricane Katrina. This year she delivered papers at the American Society for Public Administration National Conference, at the FEMA Higher Education conference, at the DHS Transportation Security Roundtable, and at a number of local emergency management events. Last year's FEMA presentation led to the creation, with Dan Goodrich, of 'Campus Emergency Planning,' a chapter in *The Challenges of Higher Education and Emergency Management*. Other recent work includes chapters in *Cultural Competency in Disaster Mitigation, Planning, Response and Recovery; Minority Resilience and the Legacy of Disaster*; and forthcoming chapters with Dan Goodrich in *Natural Hazard Mitigation: A Handbook for Practitioners and Academics*.

In June 2011 Dr. Edwards was interviewed on the CNN Headline News 'Newsmakers' program regarding an MTI report on the DHS 'See Something, Say Something' program. Dr. Edwards's most recent publications for MTI, all co-authored with Dan Goodrich, have included a study of exercises for transportation and transit agencies, the *Handbook of Emergency Management for State-Level Transportation Agencies*, and a supplement to the earlier report on *The Role of Transportation in Campus Emergency Planning*, created from their 2010 FEMA Higher Education Conference session.

Dr. Edwards was appointed U.S. chair for the European Union CAST Project for the development of unified training for first responders. She has done research in global supply chain security, resulting in a chapter co-authored with Dan Goodrich, published in *Supply Chain Security: International Innovations and Practices for Moving Goods Safely and Efficiently*. She has delivered papers at a number other of emergency management and homeland security conferences over the years including the Natural Hazards Conference, the Department of Homeland Security Center of Excellence conference, the Stevenson Disaster Institute at Louisiana State University, and annually at the American Society for Public

Administration. Her paper for the Stevenson Institute on cross border disaster response was published in the *Journal of Contingency and Crisis Management*. In June 2007 she was a guest of the Turkish government at the Second Istanbul Conference on Democracy and Global Security, and her paper titled 'Police in Catastrophic Response: Lessons Learned from Hurricane Katrina' was published in Turkey's professional journal for law enforcement. She received the Petak Award for the best paper in emergency management delivered at the 2006 ASPA conference, which focused on the distinctions between prevention and mitigation.

Dr. Edwards was a 2006 Fellow of the Foundation for Defense of Democracies, and studied Middle Eastern terrorism at Tel Aviv University. She chaired the 2006 NATO STS-CNAD meeting for 20 nations in Portugal, and presented a paper there on the evolution of American emergency management. The book, *NATO and Terrorism: On Scene! Emergency Management after a Major Terror Attack*, co-authored with Professor Friedrich Steinhausler of Salzburg University, grew out of the March 2006 NATO workshop. She has been guest editor for six special issues of *The Public Manager*, in which she published articles on Hurricane Katrina. Other articles include, 'Federal Intervention in Local Emergency Planning: Nightmare on Main Street,' in *State and Local Government Review*, and 'An Ounce of Prevention Is Worth a Pound of Cure: Improving Communication to Reduce Mortality During Bioterrorism Responses,' with Margaret L. Brandeau and other colleagues from Stanford University, in *American Journal of Disaster Medicine*, March/April 2008. Dr. Edward's other publications include *Mercury News* op-eds on homeland security, *NATO and Terrorism: Catastrophic Terrorism and First Responders* with Dr. Steinhausler, *Saving City Lifelines* with Brian Jenkins, and chapters in ICMA's *Emergency Management, with Dan Goodrich; and Homeland Security Law and Policy, First to Arrive, Handbook of Crisis and Disaster Management, The New Terror; and entries in the WMD Encyclopedia*. She has also published over 30 articles in journals, and delivered professional papers at more than 35 conferences.

Previously, Dr. Edwards was director of the Office of Emergency Services in San José, California for 14 years, including one year as acting assistant chief, San José Fire Department. She was director of San Jose's Metropolitan Medical Task Force (MMTF), a CBRNE terrorism response unit, and head of the four-county 'San José Urban Area Security Initiative.' In 2004 she co-chaired the NATO Advanced Research Workshop in Germany where she delivered a paper on research needs to support first responders to CBRNE terrorism. In October 2001, while Dr. Edwards was director of the Office of Emergency Services, the *Wall Street Journal* called San José the 'best prepared city in the United States' for disasters. She represented emergency management on the five night 'Bio-War' series on ABC's 'Nightline with Ted Koppel' in October 1999. She has been a member of the Stanford University Working Group on Chemical and Biological Warfare, the Department of Justice's Executive Session on Domestic Preparedness at the Kennedy School of Government at Harvard University, the National Academy of Sciences Institute of Medicine MMRS Review Committee, and the California Seismic Safety Commission. She was named Public Official of the Year 2002 by *Governing* magazine, and one of the 'Power 100 of Silicon Valley' by *San José Magazine*. She has a Ph.D. in public

administration, a Master of Urban Planning, an M.A. in Political Science (International Relations) and a Certificate in Hazardous Materials Management.

DANIEL C. GOODRICH, M.P.A., CEM

Dan Goodrich is a Research Associate with the Mineta Transportation Institute, and an instructor in the Master of Science in Transportation Management program, where he teaches Security for Transportation Managers. His current research is focused on the continuity of operations process and its relationship to emergency management in transportation organizations, and on transportation security issues, especially related to critical infrastructure protection.

This year Mr. Goodrich has delivered papers at the American Society for Public Administration National Conference and at the FEMA Higher Education conference. Last year's FEMA presentation led to the creation, with Frannie Edwards, of the recently published 'Campus Emergency Planning,' a chapter in *The Challenges of Higher Education and Emergency Management*. Other recent work includes forthcoming chapters with Dr. Edwards in *Natural Hazard Mitigation: A Handbook for Practitioners and Academics*. Mr. Goodrich's most recent publications for MTI, all co-authored with Dr. Edwards, have included a study of exercises for transportation and transit agencies, the *Handbook of Emergency Management for State-Level Transportation Agencies*, and a supplement to the earlier report on *The Role of Transportation in Campus Emergency Planning*, also created from their 2010 FEMA Higher Education Conference session.

Mr. Goodrich has done research in global supply chain security, resulting in a chapter co-authored with Dr. Edwards, published in *Supply Chain Security: International Innovations and Practices for Moving Goods Safely and Efficiently*. He has co-authored a chapter, 'Organizing for Emergency Management' in the ICMA textbook *Emergency Management* with Dr. Edwards, and has 3 entries on nuclear topics in *The WMD Encyclopedia*. He has delivered papers at eight other emergency management and homeland security conferences over the years, including the Natural Hazards Conference.

Mr. Goodrich was appointed U.S. Security Documents Reviewer for the European Union's CAST Project, focused on the development of unified training for first responders across EU member states. In June 2007 he was a guest of the Turkish government at the Second Istanbul Conference on Democracy and Global Security, and his paper on policing after disasters was published in Turkey. He was selected as a 2006 Fellow of the Foundation for Defense of Democracies, studying Middle Eastern terrorism in Israel at Tel Aviv University.

He delivered a paper on Fourth Generation Warfare at the 2006 NATO STS-CNAD meeting for 20 nations in Portugal, which was adopted as an annex for *NATO and Terrorism: On Scene!*, the book developed from the workshop by Dr.

Edwards and Dr. Friedrich Steinhausler. In 2004 he chaired a session on 'First Responders' at the NATO Advanced Research Workshop in Germany that focused on the research needs to support first responders to CBRNE terrorism. He also serviced as a member of the NATO Expert Session on Nuclear Security Transportation in 2003-4.

Mr. Goodrich has been an active member of the San José Metropolitan Medical Task Force, a CBRNE response unit, since 1999, where he has served as exercise director for eight facilitated exercises, a model of exercise that he developed. Harvard University's Kennedy School of Government has selected the creation of this exercise style for a case study in its executive management series.

Mr. Goodrich's civilian career has included emergency management positions for the City of San Jose, the Santa Clara County Public Health Department and Lockheed Martin Space Systems Company. He currently serves as a consultant to the California Department of Transportation on emergency management and continuity of operations planning and training, and has provided training services for NASA/Ames Research Center staff in emergency management.

Mr. Goodrich served in the United States Marine Corps for ten years, including leadership positions in Security Forces. He is distinguished rifle and a member of the President's Hundred. He also served for six years in the Army Reserve Military Police as a small arms instructor and a member of the U.S. Army Reserve shooting team. He was recalled to active duty in 2003 to train reservists being deployed to Iraq and Iraqi civilian officials.

Mr. Goodrich has a Master of Public Administration degree from San José State University, and is a Certified Emergency Manager and a FEMA Professional Continuity Practitioner.

William M. Medigovich

Col. William M. Medigovich, USA, MI, Ret. is a Research Associate with the Mineta Transportation Institute specializing in transportation emergency management and national security programs. He retired from the U.S. Government as a member of the Senior Executive Service in September 2005 following 45 years of Federal, State and military service. In his last position he served some 8 years as the Director of the Office of Emergency Transportation within the U.S. Department of Transportation. Over the course of his career he held progressively responsible governmental positions ranging from field intelligence operations to senior executive. He has national and state emergency response expertise with Weapons of Mass Destruction (WMD) preparedness and consequence management response, special event planning, and continuity of government (COG)/contingency operations and planning (COOP).

He participated in numerous interagency emergency operations centers and Joint Field Offices during real-world Incidents of National Significance and exercise events (e.g., major disasters, national security exercises, U.S. hosted international events, NATO operations, Presidential Inaugurations, national party conventions, and U.S. hosted Olympic events). He has directed numerous high level exercises for the Department of Transportation, including those specifically involving elected and senior executives. These exercises were both classified and unclassified, such as the national security TOPOFF exercises. He directed the Department's multi-modal Operations Center, with communications interface with all Federal operations centers, the White House and the Homeland Security Operations Center. The Operations Center included a highly classified, compartmented intelligence facility.

Prior to joining DOT in 1997, served as FEMA Regional Director in San Francisco, Director of the California Office of Emergency Services, and Program Administrator with the Bureau of Organized Crime and Criminal Intelligence, California Department of Justice. Bill began his career with the Central Intelligence Agency, serving some 8 years both at home and abroad.

Mr. Medigovich holds a BA and MA degrees in International Relations and Economics, from San Francisco State University and the Monterey Institute of International Studies. He is a graduate of Army Senior Service and Military Intelligence schools. He holds numerous professional and Federal education certificates. Bill is a retired colonel following some 40 years of active and reserve duty service in the field of Military Intelligence.

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