



# Emergency Management Training for Transportation Agencies

Frances L. Edwards, MUP, PhD, CEM, Daniel C. Goodrich, MPA, CEM, MEP, CSS, and James Griffith, MPA

MTI Project I280

August 2016

SJSU Research Foundation  
210 N. Fourth St., 4th Fl.  
San José, CA 95112

Tel // 408.924.7560  
Fax // 408.924.7565

transweb.sjsu.edu

## Board of Trustees

### Founder

Secretary Norman Mineta

### Honorary Co-Chairs

Congressman Bill Shuster

Congressman Peter DeFazio

### Chair

Nuria Fernandez

### Vice Chair

Grace Crunican

### Executive Director

Karen Philbrick, Ph.D.

Joseph Boardman  
Anne Canby  
Donna DeMartino  
William Dorey  
Malcolm Dougherty  
Mortimer Downey  
Rose Guilbault  
Ed Hamberger  
Steve Heminger  
Diane Woodend Jones  
Will Kempton  
Art Leahy  
Jean-Pierre Loubinoux  
Abbas Mohaddes  
Jeff Morales  
Beverly Swaim-Staley  
Michael Townes  
Marlene Turner, Ph.D.  
Richard A. White  
Bud Wright  
Edward Wytkind

State transportation agencies have a variety of responsibilities related to emergency management. Field personnel manage events – from day-to-day emergencies to disasters

– using the Incident Command System (ICS) as their organizational basis. At the headquarters level the Emergency Operations Center (EOC) coordinates the use of resources across the department and its districts, with other state departments and agencies, and through the federal Emergency Support Function 1. District-level EOCs coordinate with the department. In extreme events the transportation department may only be able to deliver limited essential services in austere conditions, so a continuity of operations/continuity of government plan (COOP/COG) is essential. This research applied the principles of andragogy to deliver ICS field level training, EOC training and COOP/COG training to a state transportation agency's staff in all districts and at headquarters. The research findings support the need for adult-oriented methods in emergency management training.

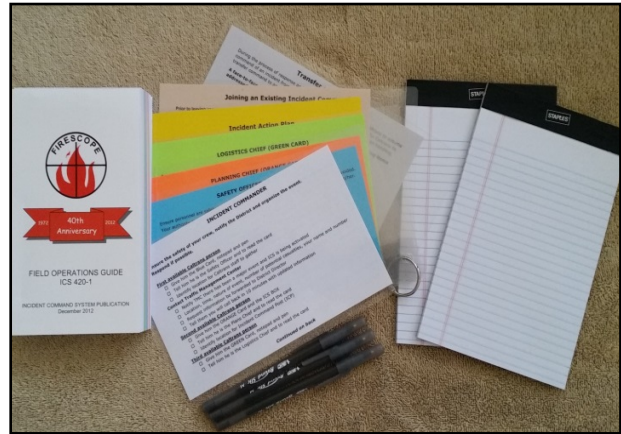
**Emergency management training courses are more effective when interactive training materials are incorporated.**

## Study Methods

The research team conducted a literature review on methods of adult education (andragogy), on emergency management training strategies, and on the specific functions for which planning assistance and training would be offered: Incident Command System (ICS), Standardized Emergency Management System and EOC management (SEMS/EOC), and Continuity of Operations/Continuity of Government (COOP/COG). They also investigated the structure of the state transportation departments and their emergency response protocols, focusing on California, Florida, Idaho, Massachusetts and Washington. They considered various federal guidance documents, such as the Homeland Security Presidential Directives of the Bush Administration, Presidential Policy Directives of the Obama Administration, and transportation-related guidance such as the Federal Highway Administration's Manual of Uniform Traffic Control Devices. Furthermore, they investigated home and personal preparedness information available to support field response personnel and their families in disaster circumstances.

The research team then created a new Incident Command System for Transportation Field Supervisors and Personnel course for the National Cooperative Highway Research Program under the supervision of the Transportation Research Board of the National Academy of Sciences. This course incorporated the principles of andragogy as they were found in the research, and adopted systems and methods that have been used by the US military for operational training purposes. The researchers also created unique training materials with operational applications. These materials are downloadable at <http://www.nap.edu/catalog/23411/incident-command-system-ics-training-for-field-level-supervisors-and-staff>.

Finally, the research team delivered training to the headquarters and twelve districts of a major state transportation department in each of the three study areas: ICS, SEMS/EOC and COOP/COG, using the principles of andragogy and the newly created emergency response tools.



## Findings

All students in each emergency management course were given a survey to determine the value of the courses that had been offered. The report contains the survey instrument and the data for each class. The findings show the value of using adult education strategies to create a meaningful training experience for transportation personnel working in the field, the EOC and the COOP/COG organization. The report also demonstrates the importance of employees knowing the contents of the relevant plan and their role in the organization in advance of the training.

## Policy Recommendations

State transportation agencies will benefit from adopting the principles of andragogy (especially the use of interactive training materials) in their emergency management training courses. The new free TRB ICS course provides a successful platform for engaging field-level personnel in emergency management. Leaders from all elements of a state transportation agency need to partner in the EOC and COOP/COG organization to ensure the safety of personnel and the recovery of organizational functions.

## About the Authors

Frances L. Edwards, PhD, is Deputy Director of the National Transportation Safety and Security Center at Mineta Transportation Institute and a professor at San Jose State University. Daniel Goodrich is a lecturer at San Jose State University and a Research Associate at the Mineta Transportation Institute. James Griffith is a Consulting Associate at the Mineta Transportation Institute.

## To Learn More

For more details about the study, download the full report at [transweb.sjsu.edu/project/1280.html](https://transweb.sjsu.edu/project/1280.html)