

Emergency Management Supplemental Report



MTI Report WP 10-01



MINETA TRANSPORTATION INSTITUTE

The Norman Y. Mineta International Institute for Surface Transportation Policy Studies (MTI) was established by Congress as part of the Intermodal Surface Transportation Efficiency Act of 1991. Reauthorized in 1998, MTI was selected by the U.S. Department of Transportation through a competitive process in 2002 as a national “Center of Excellence.” The Institute is funded by Congress through the United States Department of Transportation’s Research and Innovative Technology Administration, the California Legislature through the Department of Transportation (Caltrans), and by private grants and donations.

The Institute receives oversight from an internationally respected Board of Trustees whose members represent all major surface transportation modes. MTI’s focus on policy and management resulted from a Board assessment of the industry’s unmet needs and led directly to the choice of the San José State University College of Business as the Institute’s home. The Board provides policy direction, assists with needs assessment, and connects the Institute and its programs with the international transportation community.

MTI’s transportation policy work is centered on three primary responsibilities:

Research

MTI works to provide policy-oriented research for all levels of government and the private sector to foster the development of optimum surface transportation systems. Research areas include: transportation security; planning and policy development; interrelationships among transportation, land use, and the environment; transportation finance; and collaborative labor-management relations. Certified Research Associates conduct the research. Certification requires an advanced degree, generally a Ph.D., a record of academic publications, and professional references. Research projects culminate in a peer-reviewed publication, available both in hardcopy and on TransWeb, the MTI website (<http://transweb.sjsu.edu>).

Education

The educational goal of the Institute is to provide graduate-level education to students seeking a career in the development and operation of surface transportation programs. MTI, through San José State University, offers an AACSB-accredited Master of Science in Transportation Management and a graduate Certificate in Transportation Management that serve to prepare the nation’s transportation managers for the 21st century. The master’s degree is the highest conferred by the California State University system. With the active assistance of the California Department

of Transportation, MTI delivers its classes over a state-of-the-art videoconference network throughout the state of California and via webcasting beyond, allowing working transportation professionals to pursue an advanced degree regardless of their location. To meet the needs of employers seeking a diverse workforce, MTI’s education program promotes enrollment to under-represented groups.

Information and Technology Transfer

MTI promotes the availability of completed research to professional organizations and journals and works to integrate the research findings into the graduate education program. In addition to publishing the studies, the Institute also sponsors symposia to disseminate research results to transportation professionals and encourages Research Associates to present their findings at conferences. The World in Motion, MTI’s quarterly newsletter, covers innovation in the Institute’s research and education programs. MTI’s extensive collection of transportation-related publications is integrated into San José State University’s world-class Martin Luther King, Jr. Library.

DISCLAIMER

The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the information presented herein. This document is disseminated under the sponsorship of the U.S. Department of Transportation, University Transportation Centers Program and the California Department of Transportation, in the interest of information exchange. This report does not necessarily reflect the official views or policies of the U.S. government, State of California, or the Mineta Transportation Institute, who assume no liability for the contents or use thereof. This report does not constitute a standard specification, design standard, or regulation. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Department of Homeland Security.

MTI Report WP 10-01

EMERGENCY MANAGEMENT SUPPLEMENTAL REPORT

**A SUPPLEMENT TO MTI REPORT 08-06, THE ROLE OF TRANSPORTATION IN
CAMPUS EMERGENCY PLANNING**

July 2010

Frances L. Edwards, M.U.P., Ph.D., CEM

Daniel C. Goodrich, M.P.A., CEM

a publication of the
Mineta Transportation Institute
College of Business
San José State University
San José, CA 95192-0219
Created by Congress in 1991

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. CA-MTI-10-2727-2	2. Government Accession No.	3. Recipients Catalog No.			
4. Title and Subtitle Emergency Management Supplemental Report: A Supplement To MTI Report 08-06, The Role Of Transportation In Campus Emergency Planning		5. Report Date July 2010			
		6. Performing Organization Code			
7. Authors Frances L. Edwards, M.U.P., Ph.D., CEM and Daniel C. Goodrich, M.P.A., CEM		8. Performing Organization Report No. MTI Report WP-10-01			
9. Performing Organization Name and Address Mineta Transportation Institute College of Business San José State University San José, CA 95192-0219		10. Work Unit No.			
		11. Contract or Grant No. DTRT07-G-0054			
12. Sponsoring Agency Name and Address <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> California Department of Transportation 1120 N Street Sacramento, CA 94273-0001 </td> <td style="width: 50%; border: none;"> U.S. Department of Transportation Research and Innovative Technology Administration (RITA) Office of University Programs 1200 New Jersey Avenue, SE Washington, DC 20590 </td> </tr> </table>		California Department of Transportation 1120 N Street Sacramento, CA 94273-0001	U.S. Department of Transportation Research and Innovative Technology Administration (RITA) Office of University Programs 1200 New Jersey Avenue, SE Washington, DC 20590	13. Type of Report and Period Covered Final Report	
		California Department of Transportation 1120 N Street Sacramento, CA 94273-0001	U.S. Department of Transportation Research and Innovative Technology Administration (RITA) Office of University Programs 1200 New Jersey Avenue, SE Washington, DC 20590		
14. Sponsoring Agency Code					
15. Supplementary Notes					
16. Abstract This publication is a supplement to MTI Report #08-06, The Role of Transportation in Campus Emergency Planning, published in 2009. The contents were presented at the FEMA Higher Education Conference which was held on June 8, 2010 in Emmitsburg, Maryland.					
17. Key Words Disasters and emergency operations; Disaster preparedness; Emergency training; Hazards and emergency operations		18. Distribution Statement No restrictions. This document is available to the public through The National Technical Information Service, Springfield, VA 22161			
19. Security Classif. (of this report) Unclassified	20. Security Classifi. (of this page) Unclassified	21. No. of Pages 32	22. Price \$15.00		

**Copyright © 2011
by the Mineta Transportation Institute**

All rights reserved

Library of Congress Catalog Card Number:
2010933338

To order this publication, please contact the following:

Mineta Transportation Institute
210 North 4th Street, 4th Floor
San Jose, CA 95112
Tel (408) 924-7560
Fax (408) 924-7565

Email: mti@sjsu.edu
<http://transweb.sjsu.edu>

ACKNOWLEDGEMENTS

The authors would like to thank MTI staff, including Research Director Karen Philbrick, Ph.D.; Director of Communications and Special Projects Donna Maurillo; Research Support Manager Meg A. Fitts; Student Publications Assistant Sahil Rahimi; Student Research Support Assistant Joey Mercado; Student Graphic Artists JP Flores and Vince Alindogan; and Webmaster Frances Cherman. Additional editorial and publication support was provided by Editorial Associate Cathy Frazier.

TABLE OF CONTENTS

INTRODUCTION	1
STAKEHOLDERS	3
RESOURCES	9
INCIDENT COMMAND SYSTEM	13
CONCLUSION	21
APPENDIX A: ONLINE RESOURCES	23
ABBREVIATIONS AND ACRONYMS	25
REFERENCES	27
ABOUT THE AUTHORS	29

LIST OF FIGURES

1. Construction Equipment Like This Might be on Your Campus During a Disaster, and Could Become an Asset to Response and Recovery Efforts	2
2. After a Disaster, Medications and Other Supplies can be Distributed at Outdoor Facilities Like This	5
3. Premade Signage to Guide Students to Medical Assistance After a Disaster	10
4. Dormitory for Campus Emergency Staff Members Set Up in a Classroom	16
5. Equipment Like This Could be Available to Assist Campus Emergency Management if the Construction Contract Included a Disaster Clause	18

INTRODUCTION

Campus emergency planning involves many aspects of both the campus community and also the larger surrounding community. Large state universities, like the campuses of the University of California system, may have their own internal response resources, such as a police force. Large private colleges, such as Stanford University, may contract for police, fire and emergency medical services from the local municipal government. Most colleges in the United States are small to medium-sized institutions that may have contracted private security services, but usually rely on the local jurisdiction for sworn law enforcement resources, fire response (which may itself be volunteer) and emergency medical services.

Campuses also rely on the local jurisdiction for transportation assets. As described in the monograph *The Role of Transportation In Campus Emergency Planning* (Edwards and Goodrich 2009), the campus relies on public transit for evacuation and emergency response assets, and on campus transportation assets for providing immediate emergency shelter, evacuation and Incident Command Post resources. While the campus will generally have its own in-house capability or contracted resources for road maintenance and repair, the campus roads are part of the larger road system of the community, and therefore rely on local and state resources for restoration of service for the roads connecting the campus to the larger community.

In the last five years, campuses have begun training students, staff and faculty in the Campus Community Emergency Response Team model (C-CERT), based on the FEMA sponsored Community Emergency Response Team (CERT) program. Through this program members learn home, workplace and personal preparedness, including workspace and living space mitigation. They learn about building evacuations, fire behavior and immediate suppression (fire extinguishers and mounted fire hoses), management of a hazardous materials accident until the professionals arrive (Recognize, Avoid, Isolate and Notify—RAIN), the care of victims of medical emergencies while awaiting a professional response (Airway, Breathing, Circulation, Shock—ABCs), and search and rescue, such as following earthquake, hurricane and tornado events. (FEMA C-CERT n.d.[a])

Regardless of the resources available to the campus under its control, a good campus plan requires working with the surrounding jurisdiction(s) to ensure that off-campus coordination is in place when a disaster strikes. FEMA has been providing funding for the Disaster Resistant University program to increase resilience at America's college and university campuses (FEMA 2003). During the 13th Annual FEMA Higher Education Conference, a session was held to review the critical factors in campus emergency planning among a group of educators and campus leaders from around the nation. Their insights and suggestions documented in this report provide a rich resource for campus emergency planners.



Figure 1. Construction Equipment Like This Might be on Your Campus During a Disaster, and Could Become an Asset to Response and Recovery Efforts

STAKEHOLDERS

As has been noted, campuses do not exist in a vacuum. They are within the boundaries of municipalities, counties or parishes, and states. Each of these entities has emergency plans that include the territory in which the college is located. Therefore, when campuses undertake to write an emergency plan the leaders need to be aware of all the stakeholders who are involved in emergency management for that area.

There are immediate stakeholders on the campus. Faculty, staff and students are most directly involved. Among off-campus constituencies, parents are the biggest stakeholders in campus safety. All campuses have alumni and community supporters who can be part of the emergency response and recovery plans. Some colleges have investors whose interests have to be factored into emergency plans.

Campus groups that need to be included in emergency planning are campus law enforcement/security, campus administration, faculty senate, staff labor unions and student association. Plans must be made for closing the campus for a time, and consideration should be given to establishment of MOUs with other colleges for students to continue their education if damage will cause a closure exceeding a few weeks. This can be important in the case of a fire or hazardous materials accident which might deny certain courses access to laboratory facilities, as well as during campus-wide disasters. The role of faculty and staff in the response and recovery period should be included in labor agreements. In some state higher education systems the employees are all disaster service workers, as in California, requiring everyone drawing a pay check from a public source to continue to report to work during the disaster response and recovery phase and be assigned to do work under the Incident Command System (ICS).

Utilities, plant operations, buildings and grounds staffs all have important disaster planning roles. A decision must be made regarding who will be responsible for authorizing re-entry into campus buildings that have been affected by a disaster or emergency. Campuses with engineering programs might consider making arrangements with graduate students and faculty to assist with damage assessment, especially for buildings needed for shelter and medical care. Some pre-disaster training and certification might be needed to enable them to perform this function without taking on significant personal liability.

ATC-20 is one such program for post-earthquake building assessment and ATC-45 for postwind storm and flood events (Applied Technology Council n.d.[a]). ATC also offers training classes in the application of these post-disaster building evaluation techniques. (Applied Technology Council n.d.[b]) A brochure describing the training can be found at http://www.olemiss.edu/orgs/ccep/ATC20_2_15_2007.pdf. A brief version of the ATC-20 principles can be found at [http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Recovery%20-%20TAP%20-%20Safety%20Assessment%20Program/\\$file/ATC-20%20Guiding%20Principals%206-03.pdf](http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Recovery%20-%20TAP%20-%20Safety%20Assessment%20Program/$file/ATC-20%20Guiding%20Principals%206-03.pdf). Assessment forms for this system are available at <http://www.atcouncil.org/pdfs/DETAIL.PDF>. In the case of state-owned campuses, there may be special rules regarding campus building inspection for re-entry. For example, in California only the inspectors from the Office of State Architect can clear campus buildings at public colleges and universities for re-occupancy after an earthquake.

The shipping and receiving/warehouse group and the mail room need to be included in an emergency plan. Emergency response and recovery may depend on the ability to receive goods that have been ordered. They are a special focus of concern during periods of campus unrest and bomb threats, as they may be the first to recognize a suspicious package and prevent its delivery. The staff needs training in recognition and notification protocols. Materials and information are available from the FBI website, <http://www.fbi.gov/page2/september06/package092006.htm>. The new poster describing suspicious packages may be found at http://www.usps.com/news/_pdf/poster.pdf#search='suspicious packages poster' and should be posted in every mailroom on campus.

Student health and medical services must be included in the emergency plan. A focus on health developed during the concern for an outbreak of an infectious disease such as swine flu and avian flu. Epidemic precautions were widely practiced on college campuses. However, rapid onset disasters like earthquakes and tornadoes require a level of preparedness for dealing with traumatic injuries and orthopedic injuries in the immediate aftermath of a natural hazard event when access to normal community emergency room services may be delayed.

Campuses with nursing schools, pre-med programs and public health programs should consider post-disaster roles for students and faculty in these programs as a means of augmenting community resources for the campus. Schools interested in developing an in-house disaster medical response capability should consult their legal advisor, insurance carrier and state health department for guidance on training, qualifications and certifications needed for these personnel. While first aid trained non-medical personnel may have liability protection when rendering first aid under the Good Samaritan law, licensed medical personnel can only act within their scope of practice, which needs to be documented in advance.

Other means of augmenting campus medical capability might include MOUs with neighboring private practice physician groups and clinics. Recognize that in most states all licensed medical personnel with hospital privileges are required to report to the hospital to join the response, but if access to the hospital is not available due to infrastructure damage, a campus health center might be able to benefit from neighboring physicians' skills.

Students who have registered with the Disability Resource Center may have additional rights to campus-based medical assistance. For example, students who require regular prescription medications may store their supplies at the student health service, and plans must be made to ensure that they will have access to their medications after a disaster. Students with dialysis needs should arrange with their medical provider for back-up equipment to be kept in student health for disaster use. Students with other disabilities should be encouraged to work with their medical care providers to create disability-specific disaster kits to augment the standard water/medications/food kit. A model standard kit guide can be found at <http://www.transweb.sjsu.edu/MTIportal/research/publications/documents/Appendix%20F.pdf>.

Feeding services and housing services are critical not only for resident students, but in a disaster also for commuter students, faculty and staff. Campuses with a full meal program may already have some stockpiles of food, but plans should be made for acquiring more food during a disaster to support the expected size of the disaster-based campus community.



Figure 2. After a Disaster, Medications and Other Supplies Can Be Distributed at Outdoor Facilities Like This

Housing staff, especially resident assistants, should be represented on the emergency planning committee. They can advise on dorm capacity and alternative locations for disaster housing for commuters, or alternative housing for residents of damaged dormitories.

Consideration should also be given to how housing for students with mobility issues is managed. If the elevator is not working (power outages, post-earthquake, for example) or is unsafe to use (in a fire, for example) how will students with mobility impairment evacuate the building? Have paid staff been assigned to assist these individuals to safety using special chairs, or using the individual's own equipment? For liability reasons the campus cannot count on student volunteers to assist people with disabilities unless they have been trained and have signed an agreement to provide the service. Students with their own live-in personal assistants need to ensure that the assistant has been trained in evacuation techniques and has signed an agreement to stay with the student until he or she is safely evacuated. These agreements should be on file with the university's Disability Resource Center. The best solution may be to house students with mobility limitations on the first floor of residential buildings to ensure ease of evacuation.

Community emergency services need to be part of the campus emergency planning process. Local police probably already have a relationship with campus police for mutual aid and campus/town border issues. Fire departments and emergency medical services may have a contractual relationship with the campus, or may see the campus as just another large business. In a large community a college campus is unlikely to get special treatment, but in small community where the campus is a major employer the campus may have a specific response plan within the community's overall emergency plan. Planning with the municipality's emergency management office will ensure that the community plan and the campus plan are coordinated, especially where the campus is relying on community emergency response agencies. Community political leaders will also be concerned about the effectiveness of the campus emergency plan, as success or failure of campus emergency response can reflect on the adjacent community and damage or enhance its reputation. For example, the high profile crimes on the University of Florida campus at Gainesville had a negative effect on the reputation for safety of the community of Gainesville.

In addition to fire department-based emergency medical responders, the campus may rely on private ambulance service providers, off-campus clinics and the Public Health Department, especially for contagious disease testing and management, notably tuberculosis and sexually transmitted diseases. In a disaster, management of safe drinking water and food preparation sanitation will also require the assistance of public health department sanitarians.

A college is also a business with vendors and contractors who need to be considered, including many community businesses that provide goods and services to the campus. A business representative can provide some insight into business continuity planning and reasonable expectations for service after a disaster. Pre-disaster MOUs may be prudent to ensure the best available response from local contractors and vendors. Campuses served by mass transit should include a representative in their planning, as they have resources to assist with evacuation, sheltering, movement of emergency responders and transportation of people with disabilities and mobility impairment.

Campus neighbors are also an important part of emergency planning. These may include neighborhood associations, chambers of commerce, and adjacent businesses. Campus neighbors may include K-through-12 schools, nursing homes, hospitals, senior citizen housing developments and even shopping malls, as at Stanford University. Each of these entities will have an emergency plan for its residents, tenants or customers. Coordinating plans is important, so that one entity is not expecting to evacuate into another entity that plans to empty its facility. For example, neighborhood associations adjacent to campus may view the campus open spaces as post-earthquake shelter areas, while the campus envisions evacuating its constituents off campus to get away from potential building collapses or hazardous materials releases. Conversely, campuses may be counting on those open spaces for housing for their own commuter faculty, staff and students who are trapped at school by the failure of local roads. For example, in the San Francisco Bay Area, the Association of Bay Area Governments (ABAG) estimates that 1,700 road segments will be damaged, making driving anywhere difficult for hours to days (ABAG 2003). Consequently, San José State University (SJSU) expects to use all open space on

campus to house its own populations of 29,000 non-resident students and almost 2,000 faculty and staff who live elsewhere.

Most campuses create an emergency plan within the public safety services, often without much interaction with other elements of the campus community. Local municipal leaders from emergency management and emergency responders are seldom included in the planning, but the information from an exchange of views can be most enlightening. For example, SJSU reviewed its emergency plan in preparation for the state-wide Golden Guardian exercise in 2007, expecting the City of San José Fire Department to send rescue and hazardous materials teams to the campus as a top priority after an earthquake. It should be noted that the campus is a six square block state enclave within the city's downtown. While it generates a certain amount of business and sales tax through student, faculty and staff activities, the university pays no real estate taxes to the city. An exchange of emails with Fire Chief Darryl Von Raesfeld revealed that the city's emergency response plan called for the campus to be treated as just another downtown business, with response priorities set after the event based on triage of the events occurring simultaneously. This resulted in a realization of the importance of enhancing campus CERT training and creating additional on-campus response capability. Such an exchange of information regarding response protocols and priorities in a disaster could help to better shape the campus emergency plan to take into account the actual expectations of the surrounding community.

RESOURCES

Resources to respond to an event should be listed in advance, and each should be contacted to ensure that the campus is part of that entity's emergency response plan.

Water is the most important post-disaster resource. Emergency planners need to determine what bottled water is stored on campus for normal sales to students, staff and faculty, how much bulk bottled water is stored by departments for their internal break room supply, and how much clean potable water is in the boilers in the utility and heating plant. Swimming pool water should never be used for drinking, although it may be used for sanitation, bathing and laundry if necessary. Other sources of bulk and bottled drinking water need to be planned for in advance to ensure that every entity in town is not counting on the same water bottling plant for supplies. Pre-disaster open purchase orders or other contracts should be made to ensure the campus' position on the supplier's priority list. Students, faculty and staff should be encouraged to make a car/desk/dorm kit with a minimum 3-day supply of drinking water at one gallon per person per day. Once purchased the stock should be rotated at least annually, or through regular consumption and replacement.

Medications are the next critical resource of emergency planning. Students taking medication regularly may have a supply in the room or stored at the campus health center. Will this supply be adequate for five 24-hour days? What medications could health center staff prescribe and provide during an emergency for students with diabetes, seizure disorders, mental health needs or circulatory system problems? What medications could be prescribed and provided to staff and faculty during a disaster? Are staff and faculty told to carry a five 24-hour day supply of their essential medications?

Provide public education on personal support supplies to students, faculty and staff at least annually. Determine what supplies the university would routinely have, where they are stored, and whether it is likely that they would be accessible after a disaster. Determine what supplies could be obtained locally and make a formal arrangement for their delivery based on specific triggers in case communications systems are down. What supplies will the campus facilities and public safety staff need to carry on their duties during disasters: barricades, rope, tarps, generators and fuel for generators for food storage and lighting.

Facilities Development and Operations should ensure that all construction contracts include a clause requiring the contractor to relinquish control of the assigned personnel and equipment to the campus management section chief in a disaster. The contractor will then receive a no penalty extension to the contract equal to the period of disaster work, and be paid for the use of personnel and equipment at the contracted price.

Local police, fire, emergency medical services, emergency management staff and mass transit are important to campus response, but may be delayed by higher priority community events. Local utilities are also an essential resource for campus response and recovery efforts. These resources should not be written into the campus emergency plan until there has been a conversation with the public agency regarding the likelihood of their availability to the campus, and how long a delay should be expected before their arrival. Many campus personnel attending the session at the Higher Education Conference noted

that tight budgets force them to rely heavily on community resources, which may not actually be available.



Figure 3. Pre-made Signage to Guide Students to Medical Assistance After a Disaster

The campus public safety personnel then need to design a plan to replace or augment community resources in a disaster. The importance of CERT on campus has been discussed. The campus has other human resources that may become emergency assets. There may be students on campus who are in the military, are veterans, or are police or fire personnel who might be able to assist if they were present when the disaster occurred, and were not legally required to report for duty elsewhere. Neighborhood associations might develop MOUs with the campus for mutual assistance during a disaster.

Students with disabilities and health concerns may require special assistance during a disaster, some of which was previously discussed. Community-based non-governmental organizations may be able to provide pre-event training to students, staff and resident assistants to help them help the special needs community. Sign language interpreters, hearing aid batteries, Braille and recorded materials may all be available through local NGOs in a disaster. The campus emergency plan should include details on how to access NGO services, perhaps through a local consortium like CADRE (<http://www.vcsv.us/cadre.shtml>), or through the municipality or county.

Community volunteer groups might be able to partner with the campus. For example, the Amateur Radio Emergency Services (ARES) (<http://www.ares.org>) and Radio Amateurs

in Civil Emergency Services (RACES) (<http://www.qsl.net/races>) may establish ham radio clubs on campus whose members would then augment communications capabilities during a disaster. The American Red Cross would train campus members to open mass care and shelter facilities during a disaster. For information on local training go to <http://www.redcross.org/portal/site/en/menuitem.d8aaecf214c576bf971e4cfe43181aa0/?vgnextoid=58d51a53f1c37110VgnVCM1000003481a10aRCRD>. Community volunteers might agree to assist with campus mass care and sheltering after a disaster. Rental agreements can be made in advance with vendors of essential equipment: portable sanitation, portable outdoor lighting, and even portable office spaces can be obtained if roads are open.

Campuses with a residential population will have different challenges than large commuter schools. Campuses in small towns will have different resources available than campuses in urban metropolises with staff and faculty commuting 50 miles or more to work. Each campus emergency plan resource list needs to consider the specific needs of the campus community it will serve: natural hazards, threat analysis for the campus, resident and nonresidents students, faculty and staff.

INCIDENT COMMAND SYSTEM

Homeland Security Presidential Directive 5 (HSPD-5) mandated the use of the National Incident Management System (NIMS) for all agencies that receive federal preparedness funding from any federal agency (Bush 2003). NIMS includes the use of the Incident Command System (ICS) in the field, and a similar management system for the Emergency Operations Center (EOC) that makes strategic decisions for the organization. California and Virginia have both adapted the field version of ICS to the strategic work of the EOC, although to date there is no specifically mandated system for managing EOCs under NIMS. In California it was developed in 1993 and is called the Standardized Emergency Management System (California 2007a).

Campus emergency response will have a field level tactical response, usually led by the security or law enforcement element of the campus. It will follow ICS. There will also be an EOC whose job is to manage the event strategically, including managing resources, information, and coordination with other agencies and elements during the disaster. This is usually led by the senior administrative vice president, and supported by senior personnel from Facilities, Housing, Contracting and other business elements of the campus. A discussion of campus emergency management, including a complete set of EOC NIMS/SEMS position checklists for a campus EOC, are available in both pdf and Word in *The Role of Transportation in Campus Emergency Planning* publication (Edwards and Goodrich 2009).

At the FEMA Higher Education Conference the session that focused on campus emergency planning reviewed the roles of the campus emergency management team and suggested key elements that need to be included in campus planning considerations, along with the basic checklist elements. The session began with a review of the ICS/SEMS/NIMS system, and key elements in the formal system. Participant comments were intended to augment the material—including the specific checklists—available in the Campus Emergency Planning monograph cited above.

The Management Section is responsible for the overall management of the emergency. The Management Section Chief authorizes the opening of the EOC, and then meets with each Section Chief to create the Action Plan for the EOC, setting goals and objectives for each action period. This group coordinates with the university hierarchy (Policy Group usually consisting of the president and his cabinet), with campus elements through representation in the working sections of the EOC, and with student organizations and the local jurisdiction through the Liaison Officer. Session participants emphasized the importance of limiting EOC access to those assigned to EOC positions, noting the negative effect of “meddling” on getting decisions made and work done.

One of the earliest requests for direction may be the relationship between the campus and its neighbors. Will the campus be closed for security reasons? Will campus facilities be open to neighbors needing shelter? Will feeding stations be for university ID card holders only or also for the community? If it is a public university, would this be considered a “gift of public funds?”

The Management Section has supporting Command Staff members who assist the decision maker. For example, the university's legal adviser should also be in the EOC to advise the Management Section Chief on liability and legal issues related to emergency management decisions. Questions like whether to shelter or feed people from the neighborhood have legal implications. Decisions on campus closures and tuition reimbursements also require legal advice.

The emergency services coordinator, usually the day-to-day emergency plan manager, is responsible to ensure that the EOC is set up properly, and that all communications resources are working properly. This person must be knowledgeable about all elements of the EOC's functioning, and serve as a resource for all the other people working in the EOC.

The Liaison Officer needs to pay special attention to coordinating with both students and parents regarding the functionality and safety of the campus, and plans for maintaining classes and feeding and housing functions during the disaster. To that end he or she should maintain up-to-date contact information for students and parents in the EOC kit. This information must be updated at least once a semester.

A Safety Officer is responsible for the overall emotional temperature within the EOC as people have to work together under stress. Participants noted the importance of having a strong person in this role, one who is willing to intervene when an EOC staff member needs to take a break or go home. Keeping everyone to the shift change schedule and ensuring that healthy food is available at meal times are important practical activities discussed in the monograph.

A Security Officer may be needed to ensure that only assigned EOC staff are permitted into the EOC. It is crucial to provide a secure location for the management of the disaster. A uniformed security guard or police officer is best for this role.

The Public Information Officer (PIO) has one of the most important jobs in the EOC. Internally the PIO needs to ensure that the Policy Group gets copies of all media releases before they are sent to the media to ensure that the campus leadership knows what is happening in a timely fashion. (Note that they are briefed at the beginning of each new Action Period, but as events unfold media releases may update those briefings.)

Campuses may have students or staff with limited English capabilities, and who come from community sub-units that may have little or no English skills. Therefore it is important to determine ahead of time which languages are needed for press releases to keep the larger community informed, and for public education materials for on-campus students and staff. For example, at SJSU many of the janitorial staff members have Spanish as their first language, so radio announcements on campus status and personal preparedness material need to be available for them in Spanish. The PIO needs to have made arrangements with a native Spanish speaker to be interviewed by radio and television reporters, and with bilingual students or faculty to translate written materials into culturally and educationally appropriate Spanish for the campus and wider community. Before the disaster the PIO needs to take a census of language needs among students, staff and parents, and ensure

that those needs are met during a disaster. At a minimum, pre-made written messages for the major threats should be available in the EOC PIO kit in all the appropriate languages, so that the PIO can just fill in appropriate information in a few blanks until linguistics support is available.

In a large disaster the community may establish a Joint Information Center (JIC). This will include PIOs from all the major agencies involved in the emergency response. The purpose is to ensure that timely messages are generated for the public, and that accurate and coordinated information is released to the media. (FEMA, n.d.[b]) The PIO needs to ensure that a representative is trained to go to the JIC to represent the campus, and that that person has appropriate, working communications capability, whether cell phone, satellite phone or amateur radio, to ensure coordination with the EOC as events unfold.

Students are used to social networking through communications. The PIO should ensure that someone on the PIO team is capable of disseminating information by way of text messages, the university's website, and even Twitter if campus policy permits. This means that at least one staff member per shift must be proficient in each of these technologies. Arrangements for battery operated portable electronic devices to support social networking and chargers for them should be part of the EOC plan. Remember that every car in the campus parking lot is a potential charging station for electronic devices, hand held radios and laptop computers.

Tactical management and decisions belong to the Operations Section. Typically the head of security or the campus Chief of Police would be the Operations Section Chief. This group supports the Incident Commander in the field and communicates directly with him or her to determine what support or resources are needed. The section also communicates with the community emergency response organization to ensure a coordinated response. Requests for police and fire mutual aid, emergency medical services support and environmental health support would come from this section.

Because the campus may not have a large responder group, appropriate faculty members might become EOC staff. Faculty teaching public policy, criminal justice, emergency management and homeland security would be good selections to augment university staff. (Economics and finance professors, planning professors, journalism professors and others might be useful for staffing other sections of the EOC.) Branches within the Operations Section, that would coordinate campus services, could include Care and Shelter staffed by Campus Housing, Construction and Engineering staffed by the physical plant leadership, and medical and mental health staffed by the Student Health Service, who would coordinate campus services.

The Housing staff should have a list of housing assignments to facilitate search and rescue and space reassignments when facilities are damaged. Housing may be required to develop shelter for commuter students, staff and faculty who are on campus when the disaster occurs. Sheltering may also be needed for EOC staff members so they can stay on campus between shifts. They should coordinate with Logistics to acquire needed tents, trailers or motel accommodations.

The Planning/Intelligence Section Chief is responsible for information collection and dissemination, as well as for beginning the recovery process. Damage assessment is the first concern of the P/I Section, using campus resources when permitted, as described earlier. The Damage Assessment Branch collects safety information for all buildings that may be re-occupied after the disaster, within legal limitations. The building surveys must be documented, preferably with the ATC-20 or state OES-provided forms. At a minimum a campus map should be used with a code to indicate building conditions, photos should be taken of all buildings as they are surveyed, both outside and inside if entry is safe. This information is collected and shared with the community to become part of its official disaster report to the state government. The Situation Status Branch maintains a log of all EOC activities, and records significant changes to the campus condition. These documents are essential for reimbursement from insurance companies and possible FEMA funding.



Figure 4. Dormitory for Campus Emergency Staff Members Set Up in a Classroom

The P/I Section Documentation Branch makes maps, collects information on weather conditions from NOAA, sunrise and sunset times, and other factors that may affect the way the disaster is managed in the field. They also fill out all forms required by the state and federal government, and collect information on all aspects of the campus status. They make the organization chart for each Action Period in the EOC showing who is filling each EOC position. They use whatever system is in place to communicate this information to the higher levels of government. In California there is a web-based system called Response Information Management System (RIMS) that is used to communicate required information using forced-entry forms. (California, 2007b) Paper forms can also be faxed or scanned and sent via ham radio packet systems if the internet is not functioning.

The P/I Section Chief is also responsible to organize the Action Planning Briefing at the end of each Action Period where all section chiefs meet with the Management Section Chief. The P/I chief documents the decisions that the Management Section Chief makes and creates the written Action Plan for the next operational period. The plan states the strategic level goals and objectives, the length of the next Action Period, and includes the updated organization chart, and any supporting plans and materials. The plan becomes part of the EOC log, and is given to each section chief, and the Operations Chief verbally communicates it to the Incident Commander in the field.

Recovery begins while the disaster is still unfolding. The Recovery Unit of the P/I Section is responsible to ensure that plans are made for business recovery and restoration of services. They coordinate with the Logistics Contracting Unit to get debris removal contractors, roll out boxes for disposal of damaged personal goods, rental items like sanitation facilities and tents or trailers for residential use.

The Logistics Section includes the Information Technology Unit that manages computers and all forms of communications hardware. They are responsible for surveying the availability of communications on and off campus, and to using substitutes when traditional methods are unavailable. They issue satellite phones and cell phones from the EOC cache, and coordinate RACES operators for positions without working phones.

The Contracting/Procurement Unit acquires goods and services needed for response and recovery. This unit must maintain a list of sources of goods and services, standing purchase orders, and 24-hour contact information for all vendors that are likely to be needed for emergency response and immediate recovery. Camping goods stores, motels and hotels, restaurants with 24-hour service and delivery service, generator rental companies, information technology sales, fuel delivery companies and food and water vendors would be the top items on the list. While ideally the EOC is in a building with a generator installed, powering the EOC for the duration of the disaster response is one of the first items that must be arranged for. They need to know who takes purchase orders, who will deliver the needed goods, and which organizations have 24-hour delivery. They need contact information for Facilities maintenance personnel in case the EOC needs repairs. All the vendors on the list should be contacted in advance, and the 24-hour contact information must be updated every month. A staging area, staffed by Contracting Unit staff, has to be set up to receive and document all the goods as they arrive

One of the first actions of the Contracting/Procurement unit is to arrange for food and drinks for EOC workers, and to support the field response as needed. Water and non-caffeine drinks should be stored in advance to make EOC opening easier. Some simple snacks should also be stored in the EOC, such as granola bars, crackers and canned juice packed fruit. After the EOC is opened a regular schedule of meals should be established when possible. Alternatively, employees should be trained to bring their own emergency kit items with them to the EOC.

The Personnel Branch is responsible for staffing the EOC, and for assisting the field Incident Commander with personnel call backs and mutual aid requests to fill field roles, unless there is a law enforcement unit in the Operations Section that is handling law enforcement

mutual aid. This branch is usually staffed by campus Human Resources staff members who bring their employee rosters and contact information with them to the EOC.

These people not only tell people when to come to work to help with the emergency, but they also call people to tell them to stay home if they are not part of the emergency response. They are responsible to notify all paid faculty and staff if the campus is closed, for example.



Figure 5. Equipment Like This Could be Available to Assist Campus Emergency Management if the Construction Contract Included a Disaster Clause

The Finance/Administration Section is focused on tracking expenses, paying bills, and collecting data needed for reimbursement. Personnel from Accounting and Payroll usually staff the F/A Section. They will coordinate with Logistics staff regarding allowable expenses. At the end of the event they will coordinate the collection of photos, logs and maps from other EOC staff to facilitate reimbursement for losses and expenses from insurance companies, and from the state and FEMA as the law allows. In advance of the event the F/A leadership should contact the state emergency management agency to determine eligibility for reimbursement for emergency response costs and emergency repairs, and receive training on documentation requirements for the reimbursement programs.

The F/A staff will track costs, overtime and over budget expenses. They are responsible to keep the Management Section Chief informed of any over budget costs for emergency work, and to recommend ways to reallocate budgeted funds to pay for the emergency.

The F/A staff has to maintain the financial systems of the campus. Payroll must be issued and benefits must be paid for. In a disaster the employees may need to use sick leave or vacation to manage family disaster issues, and medical care for disaster-related injuries, so they are counting on the campus to keep its bills paid. Many staff members may receive paychecks rather than having direct deposit. Without power it may be difficult to get the paychecks printed and delivered to employees. One alternative is to have an outside source print and mail the paychecks to employees. This could be done through a commercial contract or through a mutual aid agreement with another university. Either system requires updating every payday. After Katrina, Northrup Grumman paid their employees through Western Union. Employees could go to any Western Union office with a driver's license and an employee ID card from Northrup and get cash. (Edwards 2006)

F/A should maintain a cache of paper forms and checks to allow them to process all requests for payment independent of the computer-based system, in case power is out or the computer equipment on campus is damaged. Petty cash in small bills and change may be needed to pay for food from small vendors, as ATMs and check cashing equipment are likely to be damaged and out of service for the first several days.

CONCLUSION

Campuses have multiple challenges when dealing with emergencies and disasters. Preparing for anticipated threats will create a resilient campus, even when dealing with unexpected events. Planning for anticipated threats creates a basis for good decision-making in disasters. Once the plan is written, the people who will staff the EOC need to receive training, and then have regular exercises of the plan and their positions. While emergency planning may seem expensive and time consuming, the alternative of inaction is worse.

The City of New Orleans has been criticized for failing to have an adequate plan for responding to Hurricane Katrina. The reality is that the professional emergency managers had a plan for a hurricane and flood response, but they could not get to the EOC. The mayor opened his own emergency management operation in a hotel, and his emergency plan was under 7 feet of water in the trunk of his car. The result was that he and his trusted advisers created an emergency plan as they went along, so it is no surprise that many things were left undone. (Cooper and Block 2006)

As the axiom says, "Failing to plan is planning to fail." Benefitting from the wisdom and insights of experienced campus emergency managers contained in this report will strengthen the campus' ability to respond quickly, recover quickly, and begin providing services to the campus community according to its mission.

APPENDIX A: ONLINE RESOURCES

- American Red Cross disaster training: http://www.redcross.org/portal/site/en/menitem.d8aaecf214c576bf971e4cfe43181aa0/?vgnnextoid=58d51a53f1c37110VgnVCM10000_03481a10aRCRD
- Applied Technology Council (ATC) assessment forms: <http://www.atcouncil.org/pdfs/DETAIL.PDF>
- ATC-20 principles: [http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Recovery%20-%20TAP%20-%20Safety%20Assessment%20Program/\\$file/ATC-20%20Guiding%20Principals%206-03.pdf](http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Recovery%20-%20TAP%20-%20Safety%20Assessment%20Program/$file/ATC-20%20Guiding%20Principals%206-03.pdf)
- ATC training for building evaluation techniques: http://www.olemiss.edu/orgs/ccep/ATC20_2_15_2007.pdf.
- Emergency kit contents list: <http://www.transweb.sjsu.edu/MTIportal/research/publications/documents/Appendix%20F.pdf>
- Examples of community organizations that can be of assistance during an emergency: Amateur Radio Emergency Services (ARES) (<http://www.ares.org/>) and Radio Amateurs in Civil Emergency Services (RACES) (<http://www.qsl.net/races/>)
- Example of how to access NGO assistance: <http://www.vcsv.us/cadre.shtml>
- Postal Services suspicious package recognition: <http://www.fbi.gov/page2/september06/package092006.htm> and http://www.usps.com/news/_pdf/poster.pdf#search='suspicious packages poster'.

ABBREVIATIONS AND ACRONYMS

ABAG	Association of Bay Area Governments
ABCs	Airway, Breathing, Circulation, Shock
ARES	Amateur Radio Emergency Services
ATC	Applied Technology Council
ATM	Automated Teller Machine
C-CERT	Campus Community Emergency Response Team
CADRE	Collaborative Agencies Disaster Relief Effort
CERT	Community Emergency Response Team
EOC	Emergency Operations Center
F/A	Finance/Administration
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
HSPD-5	Homeland Security Presidential Directive 5
ICS	Incident Command System
JIC	Joint Information Center
MOU	Memorandum of Understanding
NGO	Non-Government Organizations
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
OES	Office of Emergency Services
P/I	Planning/Intelligence
PIO	Public Information Officer
RACES	Radio Amateurs in Civil Emergency Service
RAIN	Recognize, Avoid, Isolate and Notify
RIMS	Response Information Management System
SEMS	Standardized Emergency Management System
SJSU	San José State University

REFERENCES

- Applied Technology Council. n.d.[a]. http://www.atcouncil.org/index.php?searchword=ATC+20&ordering=&searchphrase=all&Itemid=1&option=com_search, accessed June 26, 2010.
- . n.d.[b]. On Demand Training for ATC-20 and ATC-45. http://www.atcouncil.org/index.php?option=com_content&view=article&id=59:on-demandtraining&catid=37:training-information&Itemid=105, accessed June 26, 2010.
- Association of Bay Area Governments. 2003. Riding Out Future Quakes. <http://www.abag.ca.gov/bayarea/eqmaps/eqtrans/result.html>, accessed June 26, 2010.
- Bush, G. W. 2003. Homeland Security Presidential Directive 5. Washington, DC: The White House. <http://training.fema.gov/EMIWeb/IS/ICSResource/assets/HSPD-5.pdf>, accessed on June 26, 2010.
- California Emergency Management Agency. 2007a. Standardized Emergency Management System. <http://www.calema.ca.gov/WebPage/oeswebsite.nsf/0/7386D576C12F26F488257417006C07A7?OpenDocument>, accessed on June 26, 2010.
- . 2007b. Response Information Management System. <http://www.oes.ca.gov/operational/oeshome.nsf/978596171691962788256b350061870e/796532464bd18e7888256b3500619ac2?OpenDocument>, accessed on June 26, 2010.
- Cooper, C and Block, R. 2006. Disaster! Hurricane Katrina and the Failure of Homeland Security. New York: Times Books.
- Edwards, F.L. 2006. Businesses prepare their employees for disaster recovery. The Public Manager, vol. 35, no. 4, 7–12.
- Edwards, F.L. and Goodrich, D.C. 2009. The Role of Transportation in Campus Emergency Planning. San José, CA: Mineta Transportation Institute. <http://www.transweb.sjsu.edu/MTIportal/research/publications/summary/MTI-0806.html>, accessed on June 26, 2010.
- FEMA. 2003. Building a Disaster Resistant University. FEMA 443. <http://www.fema.gov/library/viewRecord.do?id=1565>, accessed on June 26, 2010.
- . (n.d.[a]). C-CERT. <http://www.c-cert.msu.edu/>, accessed June 26, 2010.
- . (n.d.[b]). NIMS Resource Center, Public Information Overview. <http://www.fema.gov/emergency/nims/PublicInformation.shtm>, accessed June 26, 2010.

ABOUT THE AUTHORS

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

Frances L. Edwards, Ph.D., CEM, is the director of the Master of Public Administration program and professor of political science at San José State University. She is also a research associate of the Mineta Transportation Institute at SJSU, and teaches emergency management in the Master of Transportation Management program. In 2009 she was appointed U.S. chair for the European Union CAST Project for the development of unified training for first responders. Her most recent research has been in global supply chain security, resulting in a chapter co-authored with Dan Goodrich, "Supply Chain Security and the Need for Continuous Assessment," to be published in *Supply Chain Security: International Innovations and Practices for Moving Goods Safely and Efficiently* by Praeger. In 2009 she delivered papers at the Department of Homeland Security Center of Excellence conference on MTI's research agenda, and at the American Society for Public Administration on "Legacy of Hurricane Katrina: The Challenges of International Goodwill." In 2008 she delivered papers at the American Society for Public Administration on the financial impacts of Hurricane Katrina, and at the Stevenson Disaster Institute at Louisiana State University on cross-border issues in disaster response. Her paper was published in 2009 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 where she delivered a paper titled "Police in Catastrophic Response: Lessons Learned from Hurricane Katrina." She also presented a paper at the American Society for Public Administration (ASPA) on "Collaborative Leadership in Dynamic Environments of Disasters and Crises: Collaboration at the Local Level," and she received the Petak Award for the best paper in emergency management delivered at the 2006 conference.

Dr. Edwards was a 2006 Fellow of the Foundation for Defense of Democracies, and spent part of June 2006 in Israel at Tel Aviv University studying Middle Eastern terrorism. 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 was guest editor for the Winter 2007, Winter 2008 and Winter 2009 editions of *The Public Manager*, in which she published articles on Hurricane Katrina. Her most recent articles include, "Federal Intervention in Local Emergency Planning: Nightmare on Main Street," in the Spring 2007 issue of *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.

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.

Dr. Edward’s 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, Homeland Security Law and Policy, First to Arrive, Handbook of Crisis and Disaster Management, The New Terror; entries in WMD Encyclopedia, over 25 articles in journals, and professional papers at more than 35 conferences. 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

Daniel C. Goodrich, M.P.A., CEM is an instructor and research associate for the Mineta Transportation Institute at the San José State University’s College of Business, where he also teaches Security for Transportation Managers. He was selected as a 2006 Fellow of the Foundation for Defense of Democracies, and spent part of June 2006 in Israel at Tel Aviv University studying Muslim terrorism. He 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. His most recent publication is a chapter, “Supply Chain Security and the Need for Continuous Assessment,” to be published in Supply Chain Security: International Innovations and Practices for Moving Goods Safely and Efficiently by Praeger in 2010, and “Improvised Explosive Devices,” in Handbook of Emergency and Crisis Management, to be published by Marcel Dekker in 2010, both co-authored with Dr. Frances L. Edwards. He delivered a paper on maritime security at the American Society for Public Administration in 2007, and 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, published by Springer in 2007. 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.

Mr. Goodrich serves as a consultant to the California Department of Transportation, and has provided training services for NASA/Ames Research Center staff in emergency management. He has delivered professional papers at eight conferences, and with Dr. Edwards he has co-authored a chapter, "Organizing for Emergency Management" in the ICMA textbook Emergency Management, and has 3 entries on nuclear topics in The WMD Encyclopedia.

Mr. Goodrich served in the United States Marine Corps for ten years, including leadership positions in Security Forces. He is distinguished with both rifle and pistol, 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.

MTI FOUNDER

Hon. Norman Y. Mineta

MTI BOARD OF TRUSTEES

Honorary Co-Chair

Hon. James Oberstar**
Chair
House Transportation and
Infrastructure Committee
House of Representatives
Washington, DC

Honorary Co-Chair

Hon. John L. Mica**
Ranking Member
House Transportation and
Infrastructure Committee
House of Representatives
Washington, DC

David L. Turney*

Chair/President/CEO
Digital Recorders, Inc.
Dallas, TX

William W. Millar^

Vice Chair/President
American Public Transportation
Association (APTA)
Washington, DC

Hon. Rod Diridon, Sr.

Executive Director
Mineta Transportation Institute
San Jose, CA

Ronald Barnes

General Manager
Veolia Transportation/East
Valley RPTA
Mesa, AZ

Rebecca Brewster

President/COO
American Transportation
Research Institute
Smyrna, GA

Donald H. Camph

President
California Institute for
Technology Exchange
Los Angeles, CA

Anne P. Canby

President
Surface Transportation
Policy Project
Washington, DC

Jane Chmielinski

President
DMJM Harris
New York, NY

William Dorey

President/CEO
Granite Construction, Inc.
Watsonville, CA

Mortimer Downey

Chairman
PB Consult Inc.
Washington, DC

Nuria Fernandez

Commissioner
City of Chicago,
Department of Aviation,
Chicago, IL

Steve Heminger

Executive Director
Metropolitan Transportation
Commission
Oakland, CA

Hon. John Horsley

Executive Director
American Association of State
Highway & Transportation
Officials (AASHTO)
Washington, DC

Joseph Boardman

President/CEO
Amtrak
60 Massachusetts Ave., N.E.
Washington, DC 20002

Will Kempton

Director
California Department of
Transportation
Sacramento, CA

Brian Macleod

Senior Vice President
Gillig Corporation
Hayward, CA

Dr. Bruce Magid

Dean
College of Business
San José State University
San José, CA

Stephanie Pinson

President/COO
Gilbert Tweed Associates, Inc.
New York, NY

Hans Rat

Secretary General
Union Internationale des
Transports Publics
Bruxelles, Belgium

Vickie Shaffer

General Manager
Tri-State Transit Authority
Huntington, WV

Paul Toliver

President
New Age Industries
Seattle, WA

Michael S. Townes

President/CEO
Transportation District
Commission of Hampton Roads
Hampton, VA

Edward Wytkind

President
Transportation Trades
Department, AFL-CIO
Washington, DC

** Honorary

* Chair

^ Vice Chair

Past Chair

Directors

Hon. Rod Diridon, Sr.

Executive Director

Karen E. Philbrick, Ph.D.

Research Director

Peter Haas, Ph.D.

Education Director

Donna Maurillo

Communications Director

Brian Michael Jenkins

National Transportation Security Center of
Excellence

Asha Weinstein Agrawal, Ph.D.

National Transportation Finance Center

Research Associates Policy Oversight Committee

Asha Weinstein Agrawal, Ph.D.

Urban and Regional Planning
San José State University

Jan Botha, Ph.D.

Civil & Environmental Engineering
San José State University

Katherine Kao Cushing, Ph.D.

Environmental Science
San José State University

Dave Czerwinski, Ph.D.

Marketing and Decision Science
San José State University

Frances Edwards, Ph.D.

Political Science
San José State University

Taeho Park, Ph.D.

Organization and Management
San José State University

Diana Wu

Martin Luther King, Jr. Library
San José State University



MINETA
TRANSPORTATION INSTITUTE

Created by Congress in 1991



SAN JOSÉ STATE
UNIVERSITY

Funded by U.S. Department of
Transportation and California
Department of Transportation

