


UTC Project Information	
Project Title	Great East Japan Earthquake, JR East Mitigation Successes, and Lessons for California High-Speed Rail (Former title: Great East Japan Earthquake: A Case Study of the JR East Mitigation Successes)
University	San José State University Mineta National Transit Research Consortium
Principal Investigator	Frances Edwards, Ph.D.
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Funding Source(s) and Amounts Provided (by each agency or organization)	Research and Innovative Technology Administration University Transportation Centers Program (\$24,990) California Department of Transportation Office of Research—MS42 (\$24,990)
Total Project Cost	\$49,980
Agency ID or Contract Number	DTRT12-G-UTC21
Start and End Dates	August 2013 – April 2015
Brief Description of Research Project	California and Japan both experience frequent seismic activity, which is often damaging to infrastructure. Seismologists have developed systems for detecting and analyzing earthquakes in real-time. JR East has developed systems to mitigate the damage to their facilities and personnel, including an early earthquake detection system, retrofitting of existing facilities for seismic safety, development of more seismically resistant designs for new facilities, and earthquake response training and exercises for staff members. These systems demonstrated their value in the Great East Japan Earthquake of 2011 and have been further developed based on that experience. Researchers in California are developing an earthquake early warning system for the state, and the private sector has seismic sensors in place. These technologies could contribute to the safety of the California High-Speed Rail Authority's developing system, which could emulate the best practices demonstrated in Japan in the construction of the Los Angeles-to-San Jose segment.

<p>Describe Implementation of Research Outcomes (or why not implemented)</p>	<p>Edwards, Frances. "Resiliency Capacity Building: Lessons Learned for Community Management of Radiological Emergencies from Three Mile Island to Fukushima." Presentation at the American Society for Public Administration (ASPA), Washington, DC, March 17, 2014.</p> <p>Edwards, Frances. "Hurricane Katrina Task Force 10th Anniversary presentation." Presentation at the American Society for Public Administration National Conference, Chicago, IL, March 5, 2015.</p> <p>Edwards, Frances. "Emergency Management in Conflict Zones." Presentation at the American Society for Public Administration National Conference, Chicago, IL, March 5, 2015.</p> <p>Edwards, Frances. "What is Cyber Security and How Does it Relate to Emergency Management?" Presentation at the American Society for Public Administration Webinar: Cyber Security and Emergency Management, Webinar, November 5, 2015</p> <p>Edwards, Frances and Goodrich, D. "Disaster Research: The Impact of Population Movement on Ris." Presentation at the American Society for Public Administration's Annual Meeting, Seattle, WA, March 17, 2016.</p> <p>Edwards, Frances and Goodrich, D. "Implementation of Earthquake Early Warning Systems." Presentation at the 41st Annual Natural Hazards Research and Applications Workshop, Broomfield, CO, July 10, 2016.</p>
<p>Place Any Photos Here</p>	 <p>Train System Damage in the 1995 Great Hanshin-Awaji (Kobe) Earthquake</p>

<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none">• Reports• Project Website	<p>Final report (MNTRC Website): http://transweb.sjsu.edu/project/1225.html</p> <p>Final report (TRB Website): http://trid.trb.org/view/2015/M/1352360</p>