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Community Emergency Response Teams in Santa Clara County: Analysis of Participation

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Community Emergency Response Teams in Santa Clara County:

Analysis of Participation

by

Judy A. Glickman

A Thesis Quality Research Paper
Submitted in Partial Fulfillment of the
Requirements for the
Masters Degree
in

PUBLIC ADMINISTRATION

Prof. Frances Edwards. Ph.D.

The Graduate School

San Jose State University

December, 2012

DEDICATION

This paper is dedicated to my husband, Stephen Lewis Glickman, Ph.D. (1944-2011),
whose encouragement and love never wavered.

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Introduction

Living in California means living in a state with great natural beauty. Yet that beauty comes at a price, and many times the state's geography has exacted that price through natural disasters, such as fires, floods and earthquakes. Disasters such as the great 1906 San Francisco Earthquake, the 1989 Loma Prieta and the 1994 Northridge earthquakes, and the Southern California wildfires of 2003, are part of the state's history and lore, but more importantly, these events serve as reminders of the state's potential to wreak havoc on the lives of its residents. California residents live with the daily threat of the next disaster such as a large earthquake, and are constantly reminded to prepare for the next "Big One." According to the United States Geological Survey, (USGS) publication, *Putting Down Roots in Earthquake Country*, "If you do not prepare for the next big quake in the Bay Area, you and your family could be left without a home, food and water, medical supplies, and financial resources" (U.S. Geological Survey, 2012c, p. 32). The USGS estimates that the chances of California experiencing a magnitude 6.7 or greater earthquake over the next 30 years is about 67%, with the probability for a quake greater than magnitude 6.7 in the San Francisco Bay Area at 63% (U.S. Geological Survey, 2012a). The USGS refers to these quakes as "inevitable" (U.S. Geological Survey, 2012c, p. 3)

As a result of these dynamics, and with the likelihood of confronting a natural disaster within the next thirty years, comprehensive emergency management programs at the local, county and state levels of government are essential. California's concentration on preparedness is significant, but improvements are still required. According to a report issued by the State of California Little Hoover Commission in 2006, "...the State has not even begun to plan for a catastrophic event that would quickly overwhelm local and regional response capacity,

precipitate cascading disasters, destroy critical infrastructure and hobble commerce” (State of California Little Hoover Commission, 2006, p. 1).

This research examined a facet of Santa Clara County’s local emergency and disaster preparedness by examining levels of Community Emergency Response Team (CERT) participation within the county’s fifteen cities. Utilizing the managerial audit method, the study examines current levels of participation in each city as a percentage of population, and attempts to determine what factors enhance or detract from citizen participation.

When the next natural or man-made disaster occurs, people are going to look to their local first responders to provide aid and assistance as “emergency preparedness begins at the local level” (Santa Clara County Civil Grand Jury, 2010, p. 1). However, as witnessed in the Hurricane Katrina and Loma Prieta responses, local first-responders are likely to be initially overwhelmed. A myriad of factors, such as freeway overpass failures, mass casualties, and collapse of communication systems may prevent and/or impede the response of the emergency services communities rely on daily. Current emergency management practice recognizes that not only do conventional emergency services have a role in a disaster, but so too, do businesses, non-governmental agencies and the general public. In fact, according to one author, the general public has the responsibility to, “...decrease their own vulnerability and assist in the overall community response” (Haddow, Bullock & Coppola, 2011, p. 101).

During, and after a major disaster, citizens will try to help themselves, their family and neighbors. However, untrained and unprepared volunteers can compromise the safety of themselves and others as was seen following the 1985 Mexico City earthquake which killed more than 10,000 people and injured over 30,000 (CERT Los Angeles, 2012b). Volunteers were able to save 800 people, yet tragically, 100 volunteers perished trying to help others (CERT Los

Angeles, 2012b) (Federal Emergency Management Agency, 2012c). Many lessons were learned from Mexico City, but perhaps none as relevant as that by training members of the public “in needed life saving skills with emphasis on decision making skills, rescuer safety and doing the greatest good for the greatest number” (Federal Emergency Management Agency, 2012c, Introduction section, para. 4), the general public becomes an asset versus a liability when disaster strikes. In 1985, the Los Angeles City Fire Department did just that, and is credited with being the organization that developed and first implemented the Community Emergency Response Team or CERT program. The program trains volunteer response teams in basic first aid, basic fire suppression, and light search and rescue. The first team of 30 people completed training in 1986, proving that through training, drills and exercises, the concept of training civilians to prepare for disasters and emergencies was feasible. Today, CERT programs and training exist in “all 50 states, three territories and six foreign countries” (CERT Los Angeles, 2012a). The CERT website lists California as having 336 programs, although the actual number may be higher (Citizen Corps, 2012a).

Brief History of Emergency Management, FEMA and CERT in the United States

Early Days

Emergency management in the United States is considered to have begun with the Congressional Act of 1803 (Federal Emergency Management Agency, 2012a). This act provided disaster relief in the form of an extension on tariffs and duties to merchants in the city of Portsmouth, New Hampshire following a widespread fire (Federal Emergency Management Agency, 2012a). From 1803 to 1930, *ad hoc* federal legislation was passed for relief or

compensation for more than 100 natural disasters (Federal Emergency Management Agency, 2012a).

During the 1930s the federal government's involvement in emergency management and disaster relief and compensation became more accepted (Waugh, 2007). In 1932, the Reconstruction Finance Corporation and, in 1934, the Bureau of Public Roads were given authority to provide funding and loans for repair and reconstruction of public facilities, highways and bridges damaged by natural disasters (Federal Emergency Management Agency, 2012a). The Flood Control Act of 1936 was passed because of a history of flooding along the Mississippi River, and gave the U.S. Army Corps of Engineers authority over flood control projects (Waugh, 2000) (Federal Emergency Management Agency, 2012a). In 1933, the Tennessee Valley Authority (TVA) was created by congressional charter to create dams to control flooding along the Tennessee River, as well as encourage economic development and generate electricity (Waugh, 2000) (Tennessee Valley Authority, 2012).

The 1950s

During WWII, civil defense programs such as air raid warnings and emergency shelters began to emerge as part of the federal government's early emergency management programs (Waugh, 2000) (Schroeder, Wamsley, & Ward, 2001). When the Soviets exploded their first atomic bomb, planning for atomic warfare became a reality, and civil defense had a new focus (Waugh, 2000). A nationwide system of civil defense agencies was created when Congress passed The Federal Civil Defense Act of 1950 (Waugh, 2000). The Act "gave the federal government the authority to initiate planning and provide state and local governments with "guidance, coordination, assistance, training and matching grants for the procurement of supplies and equipment" (Schroeder et al., 2001, p.361). Also passed in 1950, the Federal Disaster Relief

Act enabled the federal government to provide direct disaster assistance to state and local governments (Waugh, 2000). The Act was notable for three reasons: it established permanent authority for federal action; it shifted responsibility for declaring a disaster from Congress to the White House, and lastly, even though stating that primary responsibility for disaster response lay with state and local governments and federal response was to be supplemental, the Act formalized and committed the federal government to provide limited assistance following a disaster (Rubin, 2007b).

The 1960s

During the 1960s, a number of large-scale natural disasters tested and demonstrated the weaknesses of existing response systems as the federal government attempted to balance maintaining an effective civil defense system while also dealing with natural and technological disasters (Waugh, 2007).

On Good Friday, March 27, 1964, Alaska was struck by an earthquake that began at 5:36 P.M., lasted for nearly four minutes, and registered 9.2 on the moment magnitude (Mw) scale, making it the second largest earthquake in recorded history (Waugh, 2000) (U.S.Geological Survey, 2012b). Across Alaska, the earthquake caused ground fissures, collapsed buildings, caused landslides and generated tsunamis which were measured as far away as Chile and Japan (Waugh, 2000). The quake and tsunamis were responsible for 131 deaths (Waugh, 2000). To aid the stricken state, President Lyndon Johnson established the Federal Reconstruction and Development Planning Commission for Alaska (Rubin, 2007a). The commission, in cooperation with the state, was charged with developing reconstruction plans and making recommendations for future projects (Rubin, 2007a).

A little over a year later, Hurricane Betsy made landfall in Florida on September 8 and in Louisiana on September 9th (Rubin, 2007a). Betsy caused seventy-six deaths and was the first hurricane to result in at least \$1 billion (1965 USD) in damage (Rubin, 2007a). Once again, President Johnson was an engaged “emergency manager”, who not only undertook the monitoring of involved federal agencies, but also issued mandates for federal personnel to remain in stricken areas to oversee relief operations (Rubin, 2007a). Congress passed the Southeast Hurricane Disaster Relief Act which was “...a temporary measure to provide special assistance in areas of the states of Florida, Louisiana and Mississippi which suffered extensive property loss and damage from Hurricane Betsy in 1965” (U.S. Government Accountability Office, 1966, para. 3).

In August 1969 Hurricane Camille hit the United States. Camille, a Category 5 storm, and the second most intense hurricane ever recorded, resulted in 259 deaths and caused \$1.42 billion (1969 USD, \$9.14 billion 2005 USD) worth of damage (National Oceanic and Atmospheric Administration, 2012). Windspeeds were estimated to be close to 200 mph and one of the lowest barometric pressure readings in the Western Hemisphere was recorded in the eye of the storm (U.S. Geological Survey, 1988). Camille was the second of three Category 5 hurricanes to make landfall in the United States during the 20th century (Blake & Landsea, 2011).

The Federal Disaster Relief Act of 1950, whose purpose was to address “normal” disasters and not “blockbuster catastrophes” such as the Great Alaska Quake, Betsy and Camille, had shortcomings, and new legislation was needed (Rubin, 2007a). The 1960s saw two new pieces of legislation which increased and enhanced the federal government’s role in disaster assistance (Rubin, 2007a). The first piece of legislation was the Disaster Relief Act of 1966 which “authorized federal agencies to provide loans at below-market rates for as long as forty

years, extended aid to unincorporated communities in rural areas, and created a new category of eligibility for public colleges and universities damaged by disasters” (Rubin, 2007a, p. 95). The provisions of the Disaster Relief Act of 1966 were broadened by the Disaster Relief Act of 1969 (Rubin, 2007a). The second piece of legislation was the National Flood Insurance Act (NFIA) of 1968 which authorized the federal government to offer property owners flood insurance on the condition that local governments pass ordinances restricting development on floodplains (Rubin, 2007a). The National Flood Insurance Act led to the creation of the National Flood Insurance Plan, a program which enabled property owners to purchase flood insurance coverage from the federal government (Rubin, 2007a) (Schapley & Schwartz, 2001).

Initially limited, the federal government’s role in emergency management was slowly expanding with the advent of these acts and the first of many financial “incentives and disincentives” appeared with the purpose of encouraging hazard reduction measures at the state and local government level (Schapley & Schwartz, 2001).

The 1970s

Mother Nature continued to flex her muscles in the 1970s. In February 1971, the San Fernando Valley in California was rocked by an earthquake measuring 6.5 on the Richter scale (Rubin, 2007a). Sixty-five people died and over half a billion dollars in damage was caused, including extensive damage to dams, freeway interchanges and the damage and destruction of two hospitals (Rubin, 2007a). The San Fernando earthquake is considered to be the “spark” which led to the passage of the National Earthquake Hazards Reduction Act (NEHRA) of 1977 (Birkland, 1997). In California, the San Fernando quake resulted in the 1972 Alquist-Priolo Earthquake Fault Zoning Act (State of California Department of Conservation , 2007). NEHRA created the National Earthquake Hazards Reduction Program (NEHRP). The stated purpose of

NEHRP is "to reduce the risks of life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program" (National Earthquake Hazard Reduction Program, 2009).

In June of 1972, Hurricane Agnes made landfall in the Gulf Coast, veered out to the Atlantic, gathered strength, returned and traveled up the East Coast, causing severe flooding and damaging or destroying over 43,000 structures (Rubin, 2007a). Agnes resulted in 122 fatalities and caused over \$2.1 billion in damage (Blake & Landsea, 2011).

In 1974, Congress passed The Disaster Relief Act of 1974, establishing the process of presidential disaster declarations (Federal Emergency Management Agency, 2012a). The Act expanded federal assistance to state and local governments and provided limited assistance to individuals (Waugh, 2000) (Rubin, 2007a). However, federal involvement in emergency and disaster management was scattered among more than 100 agencies, making coordination difficult, and overlapping of programs and policies inevitable (Federal Emergency Management Agency, 2012a) (Waugh, 2000). This fragmentation made it difficult to coordinate a federal response, and was seen not only as an administrative problem, but also as a political problem. More and more, disaster victims blamed the president for slow and ineffective responses and results (Waugh, 2000).

In 1977, in response to state and local officials' annoyance with the hodge-podge of federal authorities involved with emergency management administration, the Council of State Governments and the National Governor's Association (NGA) commissioned a study on the discipline of emergency management (Rubin, 2007a). The report, among other findings, noted the scattering of emergency preparedness and response functions among numerous federal agencies and called for a more comprehensive approach to emergency management at both the

state and federal levels which would encompass the functions of mitigation, preparedness, response and recovery (Congressional Research Service, 2006) (Rubin, 2007a). On February 28, 1978, the NGA adopted a policy position that called for “consolidation of federal emergency preparedness and disaster relief responsibilities into one office [to] make the management and operation of the federal effort more effective and efficient” (Congressional Research Service, 2006, p. CRS-13).

On March 28, 1979, the Three Mile Island power plant in Dauphin County, Pennsylvania suffered a partial core meltdown which resulted in releasing small amounts of radioactive material into the environment (Haddow et al., 2011). Even though not considered a major disaster warranting a presidential disaster declaration, the public warnings and evacuations were so badly managed by the U.S. Nuclear Regulatory Commission, that President Carter ultimately had a number of the Commission’s radiological emergency management duties transferred to another agency—the soon-to-be created Federal Emergency Management Agency (Rubin, 2007a).

On April 1, 1979, President Carter, in response to the NGA study, (and perhaps convinced by the Three Mile Island accident), established the Federal Emergency Management Agency (FEMA), through Executive Order 12127 (Federal Emergency Management Agency, 2012a) (Rubin, 2007a). FEMA’s goals as the independent federal agency for the national emergency management system were to be the point of contact for state and local governments, and to address disaster mitigation, preparedness, response and recovery issues and policies (Federal Emergency Management Agency, 2012a) (Rubin, 2007a) (Waugh, 2000). Some of the agencies absorbed by FEMA included the Federal Insurance Administration, the National Fire Prevention and Control Administration, the National Weather Service Community Preparedness

Program, the Federal Preparedness Agency of the General Services Administration and the Federal Disaster Assistance Administration activities from HUD (Federal Emergency Management Agency, 2012a). Also transferred to FEMA were civil preparedness programs from the Department of Defense (Waugh, 2000).

The 1980s

From the beginning, FEMA had organizational and political problems. FEMA was criticized for giving priority to civil defense–related programs at the expense of the flood insurance and natural disaster programs. Not until the end of the Reagan Administration (1981–1989), when U.S. – Russian relations improved, were civil defense programs and issues moved to the “back-burner” (Sylves, 2008). In 1985, scandals involving senior agency officials rocked FEMA, damaging its reputation. The director at the time, Louis Giuffrida, and his top aides were forced to resign when confronted with a number of charges including “improper awarding of no-bid contracts, the use of agency funds to build luxurious living quarters for FEMA officials, acceptance of gifts by officials from contractors, and questionable payments to contractors” (History Commons, 2012, para. 7).

In the early 1980’s, FEMA adopted the Integrated Emergency Management System (IEMS), the four-phase approach to emergency management envisioned by the NGA (Edwards, 2007) (Federal Emergency Management Agency, Emergency Management Institute, 2007). The intent of IEMS was to “create an organizational culture that is critical to achieving unity of effort between government, key community partners, non-governmental organizations (NGOs) and the private sector” (Federal Emergency Management Agency, Emergency Management Institute, 2007, p. 6).

On October 1, 1987, Southern California was rocked by a destructive earthquake with a magnitude of 5.9. The Whittier Narrows earthquake, as it came to be called was the strongest quake in the Los Angeles area since the 1971 Sylmar quake. Freeway support structures were damaged, buildings collapsed, eight people died and damage was estimated at about \$358 million (U.S.Geological Survey, 1993b). The quake sharply demonstrated the need for a civilian cadre trained in disaster preparedness, and to achieve that goal, the City of Los Angeles created the Disaster Preparedness Division, housed within the Los Angeles Fire Department. Among the objectives of disaster preparedness training, research, and distribution of disaster information, was the creation of a network of Community Emergency Response Teams (CERTs). The year before, the Los Angeles Fire Department (LAFD), had implemented a pilot CERT program, but, due to limited resources, expansion was not possible at that time. After Whittier, it became possible, and Los Angeles became “aggressive” about disaster preparedness (CERT Los Angeles, 2012b).

On November 23, 1988, the Robert T. Stafford Disaster Relief and Emergency Assistance Act amended the Disaster Relief Act of 1974 (Federal Emergency Management Agency, 2012a). The Stafford Act, as it is commonly referred to, authorizes the president to issue major disaster or emergency declarations, sets broad eligibility criteria, and specifies the type of assistance the president may authorize (Sylves, 2008). “The effects of the Stafford Act were so profound for emergency managers that this law came to demarcate the beginning of modern-era national disaster management” (Sylves, 2008, p. 60).

On October 17, 1989, California once again flexed her muscles, but this time it was the San Francisco Bay Area that was rocked by an earthquake measuring 6.9 on the Richter scale.

The Loma Prieta Quake was responsible for 63 deaths, 3,757 injuries, and caused an estimated \$6 billion in property damage (U.S. Geological Survey, 1993a).

The year 1989 also saw Hurricane Hugo make landfall on September 22 in South Carolina as a Category 4 hurricane, weakening to a Category 1 as it passed over North Carolina. In its wake, Hugo left 107 dead, and caused an estimated \$7 billion in damage (Blake & Landsea, 2011). In both the Hurricane Hugo and Loma Prieta disasters, FEMA came under harsh criticism for poor disaster response (Waugh, 2000).

The 1990's

Criticism of FEMA continued, reaching a low point after Hurricane Andrew devastated Florida in August 1992. “Thousands of homeless Floridians searched days for food, water and help while relief efforts lagged” (Congressional Research Service, 2006, p.CRS-15). Andrew was a Category 5 hurricane, and after barreling through Florida, twenty-six people were dead and damages were estimated at \$26.5 billion (Blake & Landsea, 2011). Andrew was the third costliest hurricane in U.S. history (Blake & Landsea, 2011). Again, criticism of FEMA and then-President George H.W. Bush was so harsh, speculation is it cost Bush re-election in 1992 (Sylves, 2008).

In 1993, President Clinton appointed James L. Witt as the new FEMA director and the department was elevated to ex officio cabinet level status (Federal Emergency Management Agency, 2012a). Witt, the first agency director with emergency management experience, initiated reforms and reorganizations as suggested by the Government Accounting Office (GAO) and the National Performance Review studies (Waugh, 2000). The agency’s change in focus from national security programs to natural and technological disasters, an “all-hazards approach,” helped towards the redemption of FEMA’s reputation (Waugh, 2000). Often

considered the “golden years” of FEMA, the emphasis was now on mitigation and prevention programs, as well as “supporting state and local disaster efforts, building partnerships with state and local agencies and the private sector, and increasing public awareness of hazards and appropriate self-help measures...”(Waugh, 2000, p. 31).

In April of 1992, as authorized by the Stafford Act, the Federal Response Plan (FRP) was issued. The FRP was to coordinate the federal response and resources in a major disaster and had proved to be an effective tool in many emergencies and disasters (Sylves, 2008). Later, in response to the 9/11 attacks in 2001, the FRP would be replaced by the National Response Plan (NRP) in 2004 (Sylves, 2008).

In 1993, recognizing the value of the CERT program created and implemented by the LAFD, FEMA decided to expand the program nationwide (CERT Los Angeles, 2012b) (Haddow et al., 2011). “The Emergency Management Institute (EMI), in cooperation with the LAFD, expanded the CERT materials to make them applicable to all hazards” (CERT Los Angeles, 2012b, How did CERT start? section, para. 16).

The 2000’s

The September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon changed emergency management policy in the United States. In response to congressional advocacy and recommendations of the 9/11 Commission, the Department of Homeland Security (DHS) was created through the Homeland Security Act of 2002, combining “all or part of twenty-two federal agencies, forty different federal entities and approximately 180,000 employees” (Sylves, 2008, p. 70). It was one of the largest federal reorganizations since the 1947 creation of the Department of Defense, becoming operational in January 2003 (Sylves, 2008) (Department of Homeland Security, 2012a). At this point, the focus of emergency

management went from an “all-hazards” focus, to one focusing on prevention of future terrorist attacks (Sylves, 2008).

FEMA was absorbed by DHS, thereby losing its ex officio cabinet-level status as well as financial and human resources (Sylves, 2008). Other casualties of the reorganization were state and local governments, who, in order to be eligible for federal grant funds and other monies, were now expected and mandated to participate in federal anti-terrorism programs (Waugh & Tierney, 2007). “Public policy now demands putting more resources into law enforcement and counterterrorism activities and preparedness for other disasters, natural or technological, are viewed as less important” (Sylves, 2008, p. 74).

Other changes in U.S. disaster policy included creation of the above-mentioned National Response Plan (NRP) and National Incident Management System (NIMS) (Edwards, 2007) (Sylves, 2008). According to FEMA, NIMS “provides a systematic, proactive approach to guide departments and agencies at all levels of government, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and harm to the environment” (Federal Emergency Management Agency, 2012d, p. 1).

Contained within NIMS, are the Incident Command System (ICS), which forms the field-level basis for NIMS, and the Multi-agency Coordination System (MACS) (Edwards, 2007) (Federal Emergency Management Agency, 2012d). Originally developed in California in the 1970s after a series of wildland fires, ICS is a “widely applicable management system designed to enable effective, efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common

organizational structure” (Federal Emergency Management Agency, 2012d, p. 45). MACS is a process that “supports interagency cooperation in an event involving several jurisdictions or levels of government” (Edwards, 2007, p. 35).

Another change enacted after 9/11, was the creation of Citizen Corps, a program whose objective is to “help coordinate volunteer activities” with a “public safety, preparedness and response” focus (Federal Emergency Management Agency, 2012c, para. 4). FEMA is the national coordinator for the program, and in 2002 CERT became part of the Citizen Corps Program (Federal Emergency Management Agency, 2012 g) (Haddow et al., 2011). As hoped for, the CERT concept and program has spread, and as of November 2011, there were over 1100 CERT programs nationwide (Citizen Corps. 2012b).

The National Response Plan was put to the test in August of 2005 when Hurricane Katrina made landfall in the Gulf Coast states. Katrina, the deadliest and most destructive hurricane in 2005, (Hurricane Rita in September 2005 also caused extensive damage and destruction), was also one of the costliest. Responsible for at least 1,200 deaths, and an estimated \$108 billion in property damage, Katrina, easily surpassed the damage done by Hurricane Andrew in 1992 (Blake & Landsea, 2011). When Katrina was through, nearly 80% of New Orleans was flooded (Haddow et al., 2011).

The other disaster of 2005 was the response from federal, state and local agencies to Katrina. “In fact, the poor response to Katrina was eerily similar to the poor response to Andrew in 1992” (Waugh & Tierney, 2007, p.325). So loud and vociferous were the criticisms of mismanagement and lack of leadership that FEMA director Michael Brown was forced to resign (Sylves, 2008). Criticism was also leveled at Louisiana Governor Kathleen Blanco and New Orleans Mayor Ray Nagin (Haddow et al., 2011). Government after-action reports called the

response a failure, “and the recovery phase is considered to show the same level of incompetence” (Haddow et al., 2011, p. 19).

The storm’s destruction prompted a Congressional investigation that found all three levels of government were at fault, and also “...found that FEMA and the Red Cross did not have a logistics capacity sophisticated enough to fully support the massive number of Gulf coast victims” (U.S. House of Representatives, 2006, p.343). “Hurricane Katrina and the excoriated federal response to that disaster moved Congress to reconstitute FEMA as a full-service emergency management agency, but one still embedded within the gigantic Department of Homeland Security” (Sylves, 2008, p. 85).

In response to Katrina, the 109th Congress (2005-2007), enacted six statutes containing changes that would affect future federal responses, among which was the Post-Katrina Emergency Management Reform Act of 2006 (Congressional Research Service, 2007). The Post-Katrina Emergency Reform Act was signed into law by President George W. Bush in 2006. The Act reorganized FEMA, providing, among other things, a more direct line of access to the president (Federal Emergency Management Agency , 2012a). The Act also sought to “more effectively coordinate disaster preparedness, response, and recovery efforts” along with recognizing that “improved capabilities were needed for catastrophic disasters--particularly in the areas of (1) situational assessment and awareness; (2) emergency communications; (3) evacuations; (4) search and rescue; (5) logistics; and (6) mass care and sheltering” (U.S. Government Accountability Office, 2007, para. 2).

FEMA today remains within DHS, with Craig Fugate, a former state director of emergency management in Florida, as the current FEMA administrator. One of Fugate’s stated goals is to “make a culture of preparedness-especially personal preparedness-a hallmark of his

FEMA tenure” (Haddow et al., 2011, p. 23). Several veterans of emergency management from the Witt years of the 1990s have joined Fugate’s team, and he “strongly supports rebuilding the partnership with state and local emergency management organizations” (Haddow et al., 2011, p. 23).

Over the years, emergency management has gone from a civil defense focus, to an all-hazards focus, to a terrorism-focused approach, and now, once again back to an all-hazards approach. State and local government have a constitutional obligation to provide for the public’s health and safety, but, as illustrated time after time, in a major disaster or emergency, resources may not be available to provide the general public with the usual and expected level of service. In fact, if the event is serious enough, there may be *no* service for days (Haddow et al., 2011). To that end, communities, such as the cities within the County of Santa Clara, need to look for options to reduce vulnerability and increase preparedness. One such option is local participation in CERT programs.

Literature Review

In February of 2010, the County of Santa Clara began developing an annex to the 2010 Association of Bay Area Governments (ABAG) Local Hazard Mitigation Plan, *Taming Natural Disasters*. The County’s Office of Emergency Services (OES) led the effort, and was joined by thirteen of the fifteen incorporated cities in the County, (Milpitas and Los Altos Hills did not participate), along with several private sector businesses. The goal of the project “was to identify mitigation priorities and actions shared across jurisdiction borders” (County of Santa Clara, 2011a, p. 1-1). As part of the Plan development process, in November 2010, the Local Planning Team (LPT) used an online survey to “request public input regarding concern for hazard risk” (County of Santa Clara, 2011a, p. 3-19) (Appendix A). The survey was available to members of the

public who work and/or live within Santa Clara County, and was accessible online through January 15, 2011. Results of the survey would also be used to gauge the public's emergency preparedness levels. Question 6 of the survey specifically targeted CERT, and asked respondents about their CERT involvement. It is these results that provide the data utilized in the *Findings and Analysis* of this paper.

Yet, CERT teams were not always part of the emergency preparedness landscape, nor was there always an "emergency management system." In *Living with Hazards, Dealing with Disasters* William Waugh describes the evolution of emergency management in the United States from the earliest days of federal government involvement, to the Cold War era, to the "Golden Days" of FEMA under James Lee Witt, to FEMA after Witt (Waugh, 2000). This book was published pre-9-11, and presents a look at emergency management that seems almost simplistic when compared to the more complex system of today. Waugh also presents a perspective on the obstacles to effective emergency management systems which are easily translatable to an analysis of challenges facing the success and sustainability of CERT programs at the local government level. Issues discussed as obstacles to effective emergency management systems include lack of political support, public apathy, and fiscal administration (Waugh, 2000).

Local governments, faced with obstacles such as those described above, must also constantly provide justification for programs which at times may seem unnecessary to some municipal leaders. This was never truer than during this country's latest economic downturn. Evaluating an effective emergency management program can prove tricky because an effective program is a *system* comprised of many elements which are interconnected. An article in *Public Administration Review* proposes a framework for emergency managers and municipal leaders to use in evaluating their emergency management programs. The author, after completing an extensive review of expert literature on the subject of emergency management, has distilled the

commonly agreed-upon points of “best practices”, and created an evaluation with thirty elements (Henstra, March/April 2010). Henstra considers CERT to be one of the tools for a high-quality emergency management program and includes the program as a part of his proposed evaluation. This article builds on the perspective provided by the LHMP survey with regards to the value of CERT in a local emergency management program.

In 2006, the Little Hoover Commission conducted a study on California’s state of emergency preparedness and found it lacking (State of California Little Hoover Commission, 2006). The study found that shortfalls in the State’s emergency management system, if not addressed and corrected, will compromise the health and welfare of California residents in a major disaster or emergency. The Commission’s report details the State’s shortfalls and/or inconsistencies, and provides recommendations for improvement. Among the many recommendations are calls for increasing community and volunteer involvement in emergency preparedness. According to the report, California has approximately 33,000 trained CERT members (State of California Little Hoover Commission, 2006). Furthermore, the report contains the text of Governor’s Executive Order S-04-06, ordering that the strengthening of disaster preparedness in the State is to include increasing public awareness campaigns such as “Be Smart, Be Prepared, and Be Responsible” along with increasing coordination of volunteer activities (State of California Little Hoover Commission, 2006).

Faced with a daunting task, CalEMA,(California Emergency Management Agency), in its 2010-2015 Strategic Plan, describes the department’s goals and objectives for increasing “California’s ability to mitigate, plan, and prepare for disasters, emergencies, and terrorist events” and “effectively respond to and quickly recover from both intentional and natural disasters” (CalEMA, 2010, p. 2). The report demonstrates the State’s commitment to and recognition of the importance of a public that is prepared and educated with regards to hazards facing

California. Objective 2.3 of the report speaks directly to increasing citizen preparedness, which helps to provide a context for the involvement and importance of local CERT teams in the State's overall emergency preparedness level (CalEMA, 2010).

In Chapter One of *Emergency Management, Principles and Practice for Local Government*, William Waugh discussed how after 9-11, emergency management focus changed from natural and technological hazards to terrorism, and then changed back to an all hazards focus after Hurricane Katrina (Waugh, 2007). After the 2001 terrorist attacks, emergency management went from preparing for the next natural or technological disaster, to a world where the focus now became the "war on terror" (Waugh, 2007). The focus again shifted after Hurricane Katrina, reverting to some extent back to an all-hazards approach. Waugh (2007) touches on the concerns of municipal leaders and emergency managers at the still low-level of the public's emergency preparedness, which persists even after having endured and witnessed a catastrophe like Hurricane Katrina. The author also provides a look at the changing role of the government in disaster response and recovery as it evolves out of the "cavalry" role, and attempts to move the general public in the direction of having to assume greater responsibility for their own health, safety and welfare in the context of a disaster (Waugh, 2007).

While complementing previously mentioned sources used to trace the history and development of emergency management, Rubin provides an interesting local context by drawing parallels between the responses to the 1906 San Francisco Earthquake response and Hurricane Katrina (Rubin, 2007b). She provides examples such as denial of risks, partisan politics, political influences on land use planning, and the necessity of utilizing the military for disaster relief, which paint a sobering and frightening picture for anyone concerned about a future, and almost inevitable, catastrophic earthquake in California (Rubin, 2007b). Additionally, like

Waugh, Rubin also points out the general public's sense of entitlement that continues when it comes to government aid and response—a direct contrast to government's goal of shedding its role as the cavalry (Rubin 2007a). As Los Angeles CERT states so succinctly in its marketing brochure: “It is important to know, if a major disaster occurs, the LAFD, paramedics, police...WILL NOT COME!” (CERT Los Angeles, 2012a).

Edwards and Goodrich describe emergency management as a multi-faceted, multi-level system consisting of many layers of people and organizations, where the overarching goal of all involved is to “create and sustain a disaster-resilient community” (Edwards and Goodrich, 2007, p. 53). Notwithstanding the many layers and levels, it still comes down to the local level. Local control, local needs, and local response are the foundation of the local government emergency management program, which includes optimal utilization of local assets such as community volunteers. Examples such as the volunteer response to the Loma Prieta-induced 1989 Cypress Structure collapse emphasize not only the role of local volunteers in disaster response, but the role and need for *trained* volunteers, such as CERT members (Edwards and Goodrich, 2007). Haddow, in his book, *Introduction to Emergency Management*, also echoes the oft-expressed theme of trained volunteer organizations and personnel (Haddow et al., 2011).

James Lee Witt has been quoted as saying that “All disasters are local,” (Edwards and Goodrich, 2012), and nothing in recent history illustrates that principle as stunningly as the Hurricane Katrina response, or rather the failures of the response as reported by the Senate Committee on Homeland Security and Governmental Affairs in their report on Hurricane Katrina, *Hurricane Katrina: A Nation Still Unprepared* (Senate Committee on Homeland Security and Governmental Affairs, 2006). The report concluded that the disaster response was a failure, and all levels of government were culpable (Senate Committee on Homeland Security

and Governmental Affairs, 2006). Local government's late notice to evacuate and failure to adequately notify residents of transportation alternatives left twenty percent of New Orleans' population in harm's way (Edward and Steinhausler, 2007). The multi-layered federal system of disaster response failed in its initial estimate of damage and need in New Orleans, leaving thousands to fend for themselves in the flooded city. Local first responders, who were also victims of the flooding and loss of communications, were overwhelmed then, and will be again in the next disaster.

FEMA's approach to emergency management continues to evolve, and in December 2011, FEMA published a report, *A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action* (Federal Emergency Management Agency, 2011). The report is the culmination of eighteen months of dialogue between FEMA and "many of its emergency management partners – including local, tribal, state, territorial, and Federal representatives; academia; nongovernmental organizations; community members; and the private sector" (Federal Emergency Management Agency, 2012e, Principles section, para. 1). FEMA defines Whole Community as, "A means by which residents, emergency management practitioners, organizational and community leaders, and government officials can collectively understand and assess the needs of their respective communities and determine the best ways to organize and strengthen their assets, capacities, and interests" (Federal Emergency Management Agency, 2011 p. 3).

Three principles emerged from the national dialogue which represents the foundation of the Whole Community approach:

- "Understand and meet the actual needs of the whole community.
- Engage and empower all parts of the community.
- Strengthen what works well in communities on a daily basis" (p. 4-5).

Additionally, six strategic themes were identified during the national dialogue which directly address avenues for effective implementation of the principles

- “Understand community complexity.
- Recognize community capabilities and needs.
- Foster relationships with community leaders.
- Build and maintain partnerships.
- Empower local action.
- Leverage and strengthen social infrastructure, networks, and assets” (p. 5).

In the report’s “Pathways for Action” section, (p. 19-22) many suggestions and recommendations are provided for communities, government agencies and organizations as they seek to establish or improve their current emergency management operations, and the report does stress that the Whole Community approach is not a one size fits all solution. Programs and outreach efforts need to be tailored to each individual community. When considering community participation in programs such as CERT, how will officials be able to recognize and surmount barriers to participation without first knowing the demographics of their community? If a segment of the population is struggling not only with the language, but is also struggling to put food on the table, the chances of that particular population being aware of, much less enrolling in, a CERT course for \$35 is non-existent. Officials must find ways to work within the realities of their community and its residents. The population considered economically disadvantaged in Santa Clara County is going to be different from the economically disadvantaged in Bullock County, Alabama. Other avenues for communication and involvement have to be instituted, and as outlined in the principles and themes, Whole Community is effective when the “whole community” is engaged and involved.

Assessing the poor and vulnerable population's level of emergency preparedness is the subject of the scholarly article titled, "The Relationship between Socio-economic Conditions and the Impact of Natural Disasters on Rural and Urbanized Regions' Levels of Preparedness and Recovery" by Burney, Simmonds and Queeley (2007) in *Forum on Public Policy*. Their research determined that "poverty is the central factor that will determine the level of vulnerability and hence the survival of a natural hazard turned disaster" (Burney, Simmonds, & Queeley, 2007, p. 1). The poor, with limited resources and information, are impacted the most in natural and created disasters, as was seen following Hurricane Katrina: the survivors who became homeless were mostly poor (Burney, Simmonds, & Queeley, 2007). The upper and middle classes generally have more resources to assist them in evacuation, recovery and rebuilding after a disaster. As a measure of poverty, transportation is key, as impoverished families either have no personal transportation or are at the mercy of public transportation, which, as was seen in the Katrina aftermath, can be catastrophic in its failure to provide a means to evacuate.

One of the instruments used in the Burney, Simmonds, & Queeley study was the Evacuation and Reunification Readiness Scale (ERRS). The ERRS was designed for this specific study, and measures "levels of knowledge and actual preparedness, evacuation, and reunification of children and families ages 12 to over 65 years" (Burney, et al., 2007, p. 9). Participants in the study were from Florida, and the Northern and Southern United States. In evaluating the overall level of preparedness, many critical areas were found deficient among the respondents, such as no knowledge of their city's evacuation plans, lack of property insurance and lack of disaster preparedness kits. When considering the most basic human needs of food and water, 67% of respondents answered "No" or "don't know" when asked if their city would

provide potable water in a disaster; 59% of respondents answered “No” or “don’t know” when asked if their city provided essential food (Burney, et al.,2007). Burney, et.al. (2007) concluded that the impoverished find it difficult to not only engage in emergency preparedness, but also experience increased levels of difficulty in the recovery aftermath. Additionally, the authors echoed the sentiments expressed in FEMA’s Whole Community approach, particularly the first principle, to “Understand and meet the actual needs of the whole community” (Federal Emergency Management Agency, 2011, p.4). Government officials and policy makers, by knowing the demographics of their community, can effectively use that information when constructing disaster preparedness plans and policies.

Another scholarly article that examined emergency preparedness was “Factors Predicting Individual Emergency Preparedness: A Multi-State Analysis of 2006 BRFSS Data” by Ablah, Konda and Kelley (2009) in *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*. Using data from the 2006 Behavioral Risk Factor Surveillance System (BRFSS), the authors attempted to identify the factors that are “most likely to predict individual disaster preparedness” (Ablah, Konda, & Kelley, 2009, p. 317). The BRFSS questionnaire contained an 11-item general preparedness section, with six of the items actionable steps the respondent would need to meet the definition of “preparedness” as defined by this specific study. Respondents were considered “prepared” if they had completed five out of the six steps. Results showed a disconnect between the respondents’ perception of their level of preparedness, and their actual level of preparedness as measured by the BRFSS. Of the respondents, 78% felt they were prepared, but the BRFSS measurement indicated only 45% were actually prepared (Ablah, et al., 2009). Factors found to affect preparedness were income, age and ability to afford medical care, with income and age the most significant predictors. Respondents 55 years of age and older, and those reporting incomes greater than \$50,000, were found to be more likely to be prepared. Less likely to be prepared were

those respondents who had trouble affording medical care, “those with less than a high school education...and those with children in the home...” (Ablah, et al., 2009, p. 321). The study by Ablah, et al.(2009) agrees with the study conducted by Burney, et.al. (2007) in that vulnerable populations such as the economically disadvantaged are more at risk in a disaster, and are less likely to engage in emergency and disaster preparedness actions.

Included in the vulnerable population category are older adults, a sometimes overlooked segment of the population. In “Emergency Preparedness and Response: Health and Social Policy Implications for Older Adults,” Elmore and Brown (2008), reinforce the points made by Ablah, et al. (2009) and Burney, et al. (2007) in that the vulnerable and at risk populations are less likely to engage in emergency preparedness, whether through lack of ability, information or resources, and therefore, more concentrated efforts are required by local officials and the community to not only engage these people, but also to identify them. An interesting point made by Elmore and Brown (2008) is that while many older adults participate in service and support organizations, there is a segment of the older population who are *not* associated or involved with these organizations—identifying these people is essential, as, unless they and their special needs (such as lack of transportation) are recognized, they are potential victims in the next disaster. Simerman, et al. noted that 74 % of Hurricane Katrina-related deaths were age 60 and older (as cited in Elmore and Brown, 2008, p. 66).

The average citizen cannot control the when and where of the next disaster, but can, to some extent, control his own preparedness and response. To that end, community involvement in a CERT program provides the general public with an option for surviving the next “Big One.” Although there are many elements to community-level disaster preparedness, training community members in CERT is one proven mechanism for mobilizing the population for self-help. However, community leaders need to recognize that not all segments of the population are

able to engage in or capable of achieving self-help. Engaging the most vulnerable requires more effort, more work and “takes a lot of meetings and nurturing of collective decision-making” (J.Col, personal communication November 17, 2012). Sadly, the population which would *most* benefit from being prepared is oftentimes the population *least* likely to be prepared.

Problem Statement

California has the potential to produce catastrophic natural disasters, namely fires, floods and earthquakes. These disasters have happened in the past and can be expected to happen in the future. In a disaster, the public expects an effective government response; however, the immediate needs of individuals may initially go unmet in a major disaster. One method of preparing and educating citizens for meeting these immediate needs is through citizen participation in Community Emergency Preparedness Teams (CERT). However, scholars have suggested that the impoverished find it difficult to engage in meaningful personal emergency preparedness. Therefore, by teaching the middle and upper class members of a community to become self-sufficient, a community makes an investment that will permit more post-disaster resources to be directed toward the special needs and impoverished community members. This research examined the level of emergency preparedness of Santa Clara County cities with regards to their participation in a CERT program, along with attempting to ascertain what factors appear to be predictors of CERT participation or non-participation and the potential objective and subjective implications for a community with enhanced CERT participation.

Methodology

This paper utilizes the Managerial Audit principle as defined by Ronald and Kathleen Sylvia. A managerial audit analyzes and assesses the capabilities of a company's, (in this case, a city's) management method as a whole in order to evaluate their effectiveness with regards to the objectives (goals) of a program or procedure, in this case the CERT program (Sylvia and Sylvia, 2004). A managerial audit does not measure compliance, but rather may challenge the "status quo" with an eye toward improving efficiency (Sylvia and Sylvia, 2004). This audit will evaluate each city's CERT participation as a percentage of population in relation to the other cities participation. The goal of the CERT program is to improve community preparedness by training volunteer citizen teams in basic life safety and emergency preparedness skills in order to be able to assist their municipality or organization in the event of a major incident or large scale disaster (Federal Emergency Management Agency, 2012b). Utilizing CERT data obtained from the County's Office of Emergency Services (OES) Local Hazard Mitigation Plan (LHMP) survey, combined with data assembled from the cities' responses to inquiries regarding their CERT programs, this research analyzed and examined the data to see if there are quantifiable factors which are predictors of CERT participation in Santa Clara County, and what factors, if any, enhance or detract from CERT participation.

Findings

In February of 2010, the County of Santa Clara began developing an annex to the 2010 Association of Bay Area Governments (ABAG) Local Hazard Mitigation Plan, *Taming Natural Disasters*. The Disaster Mitigation Act of 2000 requires local governments to have a FEMA-approved hazard mitigation plan in order to be eligible for FEMA's Pre-Disaster Mitigation and

Hazard Mitigation Grant program (County of Santa Clara, 2011a). The County's Office of Emergency Services (OES) lead the effort, and was joined by 13 of the 15 incorporated cities in the County, (Milpitas and Los Altos Hills did not participate), along with several private sector businesses. The goal of this project "was to identify mitigation priorities and actions shared across jurisdiction borders" (County of Santa Clara, 2011a, p. 1-1). Among its many purposes the Plan's intent was to:

- "Enhance Public Awareness and Understanding
- Create a Decision Tool for Management
- Promote Compliance with State and Federal Program Requirements
- Enhance Local Policies for Hazard Mitigation Capability
- Provide Inter-Jurisdictional Coordination of Mitigation-Related Programming
- Achieve Regulatory Compliance" (County of Santa Clara, 2011a, p.2-1).

As part of the Plan development process, in November 2010, the Local Planning Team (LPT) used an online survey to "solicit public input regarding concern for hazard risk" (County of Santa Clara, 2011a, p.3-19). The survey was designed by the consulting firm Dewberry in Roseville, California. Dewberry is headquartered in Fairfax, Virginia, and in addition to offering consultant services in emergency management, disaster and mitigation services, also offers engineering and architectural consulting services. For the past decade, Dewberry has been assisting and supporting local and state governments to meet the hazard mitigation plan requirements of the Disaster Mitigation Act of 2000 (Dewberry, 2012). In constructing a local hazard mitigation plan, FEMA requires the agencies, in this case the local governments, to provide the general public with opportunities for public input and comment (County of Santa Clara, 2011a). The on-line survey provided one of these opportunities. The survey design and questions are typical of hazard mitigation plan surveys Dewberry has designed and administered

over the years (Dewberry, 2012). However, the survey's response validity was not tested (County of Santa Clara, 2011a).

The survey was available on-line through January 15, 2011, and was available to members of the public who work and/or live within Santa Clara County. While Dewberry provided the participating cities with advice on how to inform and solicit public input, it was left to the individual cities as to how to inform the public of their opportunity for input (County of Santa Clara, 2011a). Local Planning Team members were encouraged to forward the survey to their friends and family who either resided or worked in Santa Clara County. Participating cities were encouraged to “provide a link to this survey on your city website, issue a press release, and send an email distribution to local stakeholders, non-profit organizations, volunteer organizations, schools, homeowners associations, CERT members, hospital organizations” (County of Santa Clara, 2011a, p.449). Some cities, such as Campbell, notified residents and businesses of the survey through their local government access TV station and through the *Campbell Profile* publication, the city's official newsletter published three times a year and mailed to all residents in the City's Recreation and Activity Guide (City of Campbell Annex, 2012). Other cities, such as Sunnyvale, notified residents and businesses via the City's website, along with notifying by email neighborhood associations, SNAP (Sunnyvale's CERT program) and SARES (Sunnyvale's Amateur Radio Emergency Services) members (City of Sunnyvale Annex, 2012). Results of the survey would also be used by the Local Planning Team to gauge the public's emergency preparedness levels (County of Santa Clara, 2011a).

By January 17, 2011, the County had received 541 responses, out of over 1.7 million residents. While this response is not statistically significant it is an interesting reflection of community interest in and involvement in emergency preparedness. Table 1 summarizes the total number of respondents by city to the 2010 Santa Clara County Hazard Mitigation Plan Survey:

Table 1: Total Number of Respondents by City:

City or Jurisdiction	Population from 2010 Census	Number of Respondents
Campbell	39,968	21
Cupertino	59,220	25
Gilroy	48,821	16
Los Altos	29,431	13
Los Altos Hills	7,922	2
Los Gatos	29,424	21
Milpitas	66,790	5
Monte Sereno	3,341	25
Morgan Hill	37,882	13
Mountain View	74,066	21
Palo Alto	65,412	50
San Jose	952,612	144
Santa Clara	116,468	24
Saratoga	30,401	28
Sunnyvale	142,287	108
Santa Clara County Unincorporated		25
Total	1,781,642	541

Source of data: County of Santa Clara, 2011a, and US Census, 2010

The survey contained twenty-two questions, and asked participants for responses on topics such as demographics, emergency preparedness; hazard and risk awareness, and personal mitigation efforts such as flood and earthquake insurance. Specifically targeting CERT, Question 6 of the survey asked, “*Are you a trained member of your Community Emergency Response Team (CERT)? (Note: your community may use a different name than CERT such as SNAP, PANDA, San Jose Prepared, HEAT, SAFE, etc)*” (County of Santa Clara, 2011a, p. 442). Possible responses were: *Yes; No, I would like to learn more about CERT; and No, I am not interested in being a trained CERT member* (County of Santa Clara, 2011a, p. 442).

The majority of the respondents, slightly over 40%, responded that they were part of CERT. A little less than one-fourth of respondents answered that they were not part of a CERT

program, but would like to learn more about the program. Somewhat surprisingly, over one-third of respondents answered that they were not part of CERT and were not interested in the program—refer to Table 2 below.

Table 2: Countywide response to Question 6

Yes, I am a part of CERT	No, I am not a part of CERT, but would like to learn more	No, I am not interested in CERT
214 (40.3%)	130 (24.5%)	187 (35.2%)

Source: County of Santa Clara, 2011a

For a breakdown of responses to Question 6 by city refer to Table 3, below, which takes each city's total number of responses as listed in Table 1 above and sorts them by type of response.

Table 3: Responses to Question 6 by city:

City/Jurisdiction	Total # of responses	Yes, I am a part of CERT		No, I am not a part of CERT but would like to learn more		No, I am not interested in being a CERT member	
	Total	#	%	#	%	#	%
Campbell ₁	21	2	(10%)	5	(25%)	13	(65%)
Cupertino	25	14	(56%)	5	(20%)	6	(24%)
Gilroy	16	4	(25%)	7	(43.8%)	5	(31.3%)
Los Altos	13	7	(53.8%)	6	(46.2%)	0	0
Los Gatos	21	7	(33.3%)	12	(57.1%)	2	(9.5%)
Monte Sereno	25	3	(12.5%)	11	(45.8%)	10	(41.7%)
Morgan Hill	13	3	(23.1%)	4	(30.8%)	6	(46.2%)
Mountain View	21	10	(47.6%)	2	(9.5%)	9	(42.9%)
Palo Alto ₂	50	35	(71.4%)	2	(4.1%)	12	(24.5%)
San Jose	144	17	(12%)	45	(31.7%)	80	(56.3%)
Santa Clara	24	3	(12.5%)	7	(29.2%)	14	(58.3%)
Saratoga ₃	28	16	(61.5%)	3	(11.5%)	7	(26.9%)
Sunnyvale	108	79	(75.2%)	14	(13.3%)	12	(11.4%)
₁ One respondent skipped this question, ₂ One respondent skipped this question ₃ Two respondents skipped this question							

Source of the data: County of Santa Clara, 2011a

Table 4, below, illustrates the percentages of “yes” responses ranging from a low of 10% to a high of 75.2%. Palo Alto and Sunnyvale had the highest percentage of “yes” responses, with

71.4% and 75.2%, respectively. The cities with the lowest percentage of “yes” responses were Campbell and San Jose, with 10% and 12%, respectively.

Table 4: “Yes” answers as a percentage of city’s total survey responses

<i>Cities sorted by highest to lowest percentage of respondents answering "Yes, I am a member of CERT"</i>	
CITY	Yes, I am a member of CERT
Sunnyvale	75.2%
Palo Alto	71.4%
Saratoga	61.5%
Cupertino	56%
Los Altos	53.8%
Mountain View	47.6%
Los Gatos	33.3%
Gilroy	25%
Morgan Hill	23.1%
Santa Clara	12.5%
Monte Sereno	12.5%
San Jose	12%
Campbell	10%

Source of the data: County of Santa Clara, 2011

With reference to Table 5, below, the percentages of “No, I am not a member of CERT but am interested” responses ranged from a low of 4.10% to a high of 57.1%. Los Gatos and Los Altos had the highest percentage of “interested” responses, with 57.1% and 46.2%, respectively. The cities with the lowest percentage of “interested” responses were Mountain View and Palo Alto, with 9.5% and 4.1% respectively.

Table 5: “No, I am not a member of CERT but I am interested” answers as a percentage of city’s total survey responses

<i>Cities sorted by highest to lowest percentage of respondents answering “No, I would like to learn more about CERT.”</i>	
CITY	No, not CERT member, but interested.
Los Gatos	57.1%
Los Altos	46.2%
Monte Sereno	45.8%
Gilroy	43.8%
San Jose	31.7%
Morgan Hill	30.8%
Santa Clara	29.2%
Campbell	25%
Cupertino	20%
Sunnyvale	13.3%
Saratoga	11.5%
Mountain View	9.5%
Palo Alto	4.1%

Source of the data: County of Santa Clara, 2011

The percentages of “No, I am not interested in being a CERT member” ranged from a high of 65% to a low of 0%. Refer to Table 6, below. Campbell and Santa Clara had the highest percentage of “not interested” responses with 65% and 58.3%, respectively. Los Gatos and Los Altos had the lowest percentage of “not interested” responses, with 9.5% for Los Gatos, and 0 responses from Los Altos indicating no interest in CERT.

Table 6: “No I am not interested in being a CERT member” answers as a percentage of city’s total survey responses

<i>Cities sorted by highest to lowest percentage of respondents answering "No, I am not interested in being a CERT member."</i>	
CITY	Not interested in being a CERT member
Campbell	65%
Santa Clara	58.3%
San Jose	56.3%
Morgan Hill	46.2%
Mountain View	42.9%
Monte Sereno	41.7%
Gilroy	31.3%
Saratoga	26.9%
Palo Alto	24.5%
Cupertino	24%
Sunnyvale	11.4%
Los Gatos	9.5%
Los Altos	0

Source of the data: County of Santa Clara, 2011a

While the data from the survey appears to provide a proxy for interest in CERT membership in the cities, the very low response compared with the actual community population means that the responses are not statistically significant. Therefore, in an attempt to find actual city CERT membership, a city by city examination of current CERT programs and membership was conducted and documented in Table 7, below. Each city was contacted via email and telephone for information regarding their CERT programs. The contacts at the cities were asked for the number of current, active CERT members; year the program started in their city; cost to participate; and how/if the city maintains contact with program graduates.

Table 7: CERT Programs in Santa Clara County by City

CERT Programs in Santa Clara County by City					
City	Name of CERT program; Year program started ()	2012 Active CERT membership	Cost to participate	Population	Comments
Campbell	Campbell CERT (2012)	40	\$35.00	39,968	Training is through Santa Clara County Fire. Original CERT program ran 2002-2006. Discontinued due to staff reductions.
Cupertino	Cupertino CERT (1991)	Over 1,000 trained; 50-100 Active (est.)	Free for residents	59,220	Training is through Santa Clara County Fire.
Gilroy	Gilroy CERT (2010)	50	Free for residents	48,821	Members are considered active if they have attended at least 3 of the 12 most recent monthly training meetings.
Los Altos	Not Available			29,431	
Los Altos Hills	LAHCFD CERT (2008)	180	Free for residents	7,922	Training is through Santa Clara County Fire
Los Gatos	CERT (2003)	222	\$35.00	29,424	
Milpitas	S.A.F.E. (2001)	500-600 Trained; 250 Active (est.)	Free for residents	66,790	SAFE=Strategic Actions for Emergencies
Monte Sereno	Monte Sereno CERT (2003)	28	\$35.00	3,341	
Morgan Hill	Morgan Hill CERT (2003)	200 Trained; 45 Active	Free for residents	37,882	
Mountain View	CERT (2001)	914	Free for residents	74,066	Prior to adoption of FEMA CERT curriculum, city had a Neighborhood Disaster Preparedness program, 1995-2001
Palo Alto	PANDA Not Available			65,412	
San Jose	San Jose Prepared! (1994)	Over 5,000 Trained; 1,424 Active	\$50.00	952,612	Prior to adoption of CERT curriculum, cit had an Emergency Preparedness program 1986-1994
Santa Clara	HEAT (1995)	741 Trained; 20-50 Active (est.)	\$25/student; \$40/couple	116,468	HEAT=Home Emergency Assistance Team
Saratoga	Saratoga CERT (2006)	50	\$35.00	30,401	Training is through Santa Clara County Fire
Sunnyvale	SNAP (1986)	Over 1,000 trained; 250 active	\$15.00 Training provided at no cost to residents. Charge is for the Red Cross Basic First Aid & Adult CPR course.	142,287	SNAP= Sunnyvale Neighbors Actively Prepare

Sources of Information: City of Campbell *What's New!*; City of Cupertino CERT; City of Cupertino Adopted Budget 2012-13; Edwards, 2012; City of Gilroy CERT; City of Los Altos Hills; Los Gatos/Monte Sereno Police Department Community Outreach Coordinator; City of Milpitas; City of Morgan Hill; Mountain View Fire Department; City of San Jose; City of Santa Clara; City of Saratoga CERT; City of Sunnyvale Emergency Preparedness; US Census Bureau

Table 8 illustrates the number of CERT memberships as suggested by the responses to the “yes” question in relation to each city’s population over the age of 18. (According to the CERT/Citizen Corps website, the minimum suggested age for participation is 18).

Table 8: Theoretical number of CERT members as suggested by the percentage of LHMP survey Question #6 respondents.

<i>City</i>	% of “Yes” respondents’	City population over 18	Theoretical # of CERT members	Reported active CERT members	Difference
Campbell	(10%)	31,078	3,107	10	3,097
Cupertino	(56%)	42,227	23,647	50-100 (est.)	23,597-23,547
Gilroy	(25%)	33,838	8,460	50	8,410
Los Altos	(53.8%)	21,416	11,521	Not Available	
Los Gatos	(33.3%)	22,846	7,607	222	7,385
Monte Sereno	(12.5%)	2,525	315	28	287
Morgan Hill	(23.1%)	27,044	6,247	45	6,202
Mountain View	(47.6%)	59,471	28,308	914	27,394
Palo Alto	(71.4%)	49,324	35,217	50	35,167
San Jose	(12%)	711,264	85,351	1,424	83,927
Santa Clara	(12.5%)	91,694	11,461	20-50 (est.)	11,441-11,411
Saratoga	(61.5%)	22,753	13,993	50	13,943
Sunnyvale	(75.2%)	108,646	81,701	250	81,451

Sources: US Census Bureau, American FactFinder

None of the cities reported CERT membership numbers consistent with or equal to the CERT memberships as suggested by the percentage of “yes” responses, therefore, no correlation between the responses to the CERT Question (Questions #6) of the Local Hazard Mitigation

Plan's public survey and actual CERT membership was found. This is due to the low number of responses in each city, and the minimal outreach that was conducted to get responses.

Analysis

The intention of this study was to analyze and examine the CERT data obtained from the County's Office of Emergency Services (OES) Local Hazard Mitigation Plan (LHMP) survey, combined with data assembled from the cities' responses to inquiries regarding their CERT programs, to see if there are quantifiable factors which are predictors of CERT participation in Santa Clara County, and what factors, if any, enhance or detract from CERT participation.

As noted in the *Findings* section, and as illustrated in Table 8, none of the cities reported CERT membership numbers consistent with or equal to the CERT memberships as suggested by the percentage of "yes" responses obtained in response to the CERT Question (Question #6) of the Local Hazard Mitigation Plan's public survey. Because of the low number of responses in each city, no correlation between suggested CERT memberships and the actual CERT membership could be found. The LHMP survey response cannot be said to be a genuine indicator of CERT participation in Santa Clara County.

However, referencing back to Table 7, a potential predictor of CERT participation could be attributed to the age of the program in the respective cities. The City of San Jose's, (pop. 952,612), CERT program, known as *San Jose Prepared!* has existed since 1994. Prior to that, in 1986, the San Jose Fire Department had a door-to-door preparedness campaign with an emergency preparedness handout. *San Jose Prepared!* has trained thousands of people, (the count was over 5,000 in 2006 according to Dr. Frances Edwards, former Director of San Jose's

Office of Emergency Services)(F. Edwards, personal communication, November 17, 2012), with the current roster of active members at 1,424.

The City of Mountain View's current roster of active CERT members is reported as being 914, which is not an insignificant number, in a city with a population of 74,000 when compared to the other cities in the county. Prior to adoption of the current FEMA CERT curriculum in 2001, the city had a Neighborhood Disaster Preparedness program which ran from 1995 to 2001. So, like San Jose, Mountain View has had some variation of a volunteer emergency preparedness program for a significant amount of time.

The City of Santa Clara's (pop. 116,468) CERT program, known as HEAT (Home Emergency Assistance Team), is another example of a program with longevity, having existed since 1995. The city has had a total of 741 people complete the course, and estimates the current active roster between 20-50 volunteers.

Sunnyvale, (pop. 142,287), the city with the highest percentage, 75.2%, of survey respondents who said "yes" they were members of CERT (Table 4), has a long-standing CERT program called SNAP (Sunnyvale Neighbors Actively Prepare), that has been in existence since 1986 (F. Edwards, personal communication, November 17, 2012). The city currently has enough interested residents to hold 3 classes a year, with each class containing about 21-40 participants. The city estimates it has trained well over 1,000 people, and the current count of active members is 250 (City of Sunnyvale, 2012b).

What may also be a factor in Sunnyvale's level of CERT participation is the strong and active base of neighborhood associations—currently totaling 26. (Sunnyvale Neighborhoods, 2012). The neighborhood associations encourage residents to get to know their neighbors and become involved in their communities, through such programs as SNAP. Referencing back to

Table 1, predictably, San Jose as the county's most populated city, had the highest number of responses to the LHMP survey—144. The county's third most populous city, Santa Clara, with a population of 116,468, registered a disappointing 24 respondents to the LHMP survey.

However, Sunnyvale, , with approximately 800,000 fewer residents than San Jose, had only 36 fewer respondents than San Jose,-for a total of 108-who answered the on-line survey questions, suggestive of an involved and networked community, possibly attributable to the neighborhood associations.

As another possible source for CERT program participation predictors, the demographics of the communities were examined. Table 9 below provides population, median income, home ownership rates, and education levels for the fifteen cities in Santa Clara County. Continuing to look at Sunnyvale, Table 10 shows Sunnyvale ranks 2nd in population behind first place San Jose in Santa Clara County. For median incomes, Sunnyvale ranks 11th in the county, as shown in Table 11, and ranks 13th in home ownership rates and 9th in percentage of population with a bachelor's degree or higher, as shown in Tables 12 and 13 respectively. There is no discernible pattern to the city's demographic rankings that could be considered a factor of significance in Sunnyvale's level of SNAP participation, or Sunnyvale's response numbers to the LHMP survey.

Table 9: Demographics of cities in Santa Clara County

City	Population	Median Income	Home Ownership Rate	Bachelor's Degree or Higher
Campbell	39,968	\$79,464	52.1%	43.9%
Cupertino	59,220	\$120,201	64.6%	74.7%
Gilroy	48,821	\$75,483	62.1%	23.8%
Los Altos	29,431	\$149,964	85.5%	78.2%
Los Altos Hills	7,922	\$218,077	88.1%	83.3%
Los Gatos	29,424	\$122,875	62.2%	66.2%
Milpitas	66,790	\$94,589	66.6%	39.3%
Monte Sereno	3,341	\$181,719	90%	71.4%
Morgan Hill	37,882	\$94,301	74.3%	38.8%
Mountain View	74,066	\$91,446	42.2%	59.4%
Palo Alto	65,412	\$120,670	58.0%	79.3%
San Jose	952,612	\$80,864	59.5%	36.6%
Santa Clara	116,468	\$89,004	45.8%	49.2%
Saratoga	30,401	\$145,023	84.7%	76.8%
Sunnyvale	142,287	\$90,174	48.9%	56.1%

Source: U.S. Census Bureau, 2010 U.S. Census; U.S. Census Bureau, 2006-2010 American Community Survey

Table 10: Santa Clara cities sorted by population				Table 11: Santa Clara cities sorted by median income		
Rank	City	Population		Rank	City	Median Income
1	San Jose	952,612		1	Los Altos Hills	\$218,077
2	Sunnyvale	142,287		2	Monte Serenio	\$181,719
3	Santa Clara	116,468		3	Los Altos	\$149,964
4	Mountain View	74,066		4	Saratoga	\$145,023
5	Milpitas	66,790		5	Los Gatos	\$122,875
6	Palo Alto	65,412		6	Palo Alto	\$120,670
7	Cupertino	59,220		7	Cupertino	\$120,201
8	Gilroy	48,821		8	Milpitas	\$94,589
9	Campbell	39,968		9	Morgan Hill	\$94,301
10	Morgan Hill	37,882		10	Mountain View	\$91,446
11	Saratoga	30,401		11	Sunnyvale	\$90,174
12	Los Altos	29,431		12	Santa Clara	\$89,004
13	Los Gatos	29,424		13	San Jose	\$80,864
14	Los Altos Hills	7,922		14	Campbell	\$79,464
15	Monte Serenio	3,341		15	Gilroy	\$75,483

Source: U.S. Census Bureau, 2010 U.S. Census; U.S. Census Bureau, 2006-2010 American Community Survey

Table 12: Santa Clara County cities sorted by Home Ownership Rate				Table 13: Santa Clara County cities sorted by % of population with a Bachelor's degree or higher		
Rank	City	Home Ownership Rate		Rank	City	Bachelor's Degree or Higher
1	Monte Sereno	90.00%		1	Los Altos Hills	83.30%
2	Los Altos Hills	88.10%		2	Palo Alto	79.30%
3	Los Altos	85.50%		3	Los Altos	78.20%
4	Saratoga	84.70%		4	Saratoga	76.80%
5	Morgan Hill	74.30%		5	Cupertino	74.70%
6	Milpitas	66.60%		6	Monte Sereno	71.40%
7	Cupertino	64.60%		7	Los Gatos	66.20%
8	Los Gatos	62.20%		8	Mountain View	59.40%
9	Gilroy	62.10%		9	Sunnyvale	56.10%
10	San Jose	59.50%		10	Santa Clara	49.20%
11	Palo Alto	58.00%		11	Campbell	43.90%
12	Campbell	52.10%		12	Milpitas	39.30%
13	Sunnyvale	48.90%		13	Morgan Hill	38.80%
14	Santa Clara	45.80%		14	San Jose	36.60%
15	Mountain View	42.20%		15	Gilroy	23.80%

Source: U.S. Census Bureau, 2010 U.S. Census; U.S. Census Bureau, 2006-2010 American Community Survey

Yet, when examining the three cities which had the highest percentages of responses to “No, I am not interested in being a CERT member,” more of a pattern emerges. The three cities with the highest percentages of “No, not interested” responses were Campbell (65%), Santa Clara (58.3%), and San Jose (56.3%). With the exception of population size ranking, all three cities rank in the lower third of Santa Clara County for median income, home ownership rates, and education. Figure 1 diagrams the three cities and their rankings. This data supports the argument made by scholars that one of the predictors of disaster preparedness is income (Ablah, et al., 2009).

Cities with highest percentage of “No, not interested in CERT” responses

(Fig. 1)

What is interesting is when Sunnyvale’s rankings are added, that city’s rankings are very similar to Campbell, San Jose and Santa Clara. See Fig. 2 below.

Cities with highest percentage of “No, not interested in CERT” responses including Sunnyvale

(Fig. 2)

Yet Sunnyvale had the highest percentage (75.2%) of respondents who said they were a member of CERT, along with one of the lowest percentages (11.4%) of respondents who said they were not interested in becoming a CERT member---(Los Altos was the lowest with zero responses, and Los Gatos was the second lowest with 9.5%, see Table 6). This observation suggests that longevity of the program, combined with an additional factor such as active and visible neighborhood programs and events, tends to enhance CERT participation.

By comparison, the Town of Los Gatos (pop. 29,424), reports 222 active CERT members, an impressive number in a town this size and considering that the CERT program has only been in existence since 2003. Surprisingly, the Los Gatos response percentage for “yes, I am a member of CERT” was only 33.3%, yet the town ranked first for “Not a member, but would like to learn more” with 57.1% of respondents wanting more information. Los Gatos rankings for home ownership and education were midway—8th for home ownership rates, and 7th for education.(Tables 11 & 12) However, Los Gatos ranked in the top third for median income,

coming in at 5th countywide.(Table 11). In fact, the top five respondents to “yes, I am a member of CERT”, ranked in the top half for median incomes with the exception of Sunnyvale, which ranks 11th in the countywide ranking (Table 11). This observation suggests that wealthier communities have a population more inclined to participate in community enhancing programs such as CERT, in the absence of additional supportive programs or organizations, than do less wealthy communities.

Conclusion

This research examined the level of emergency preparedness of Santa Clara County cities with regards to their participation in a CERT program, and attempted to discover potential factors indicative of predicting an individual’s CERT participation or non-participation. Utilizing the Managerial Audit principle, this paper examined and evaluated the current level of CERT participation within Santa Clara County by examining CERT data obtained from the County’s Office of Emergency Services (OES) Local Hazard Mitigation Plan (LHMP) survey, in combination with data assembled from the cities’ responses to inquiries regarding their CERT programs. As a managerial audit does not measure compliance, but rather may challenge and question the “status quo”, (Sylvia and Sylvia, 2004), recommendations based on the data observed and included in the *Findings* and *Analysis* sections are suggested within this *Conclusion* component.

The next natural or man-made disaster is going to have people looking to their first responders for immediate aid and assistance. However, local first-responders are likely to be initially overwhelmed, as was seen in disasters such as Hurricane Katrina, Loma Prieta and more recently, Hurricane Sandy. During and after a major disaster, citizens will try to help

themselves, their family and neighbors, however, untrained and unprepared volunteers can compromise the safety of themselves and others, as was seen following the 1985 Mexico City earthquake in which 100 volunteers perished trying to help others (CERT Los Angeles, 2012b) (Federal Emergency Management Agency, 2012b). Not only do education, training and preparedness save lives, but they produce a public that becomes an asset instead of a liability when disaster strikes. Substantial literature exists on preparedness measures undertaken at the national and state levels, yet, truly, “emergency preparedness begins at the local level” (Santa Clara County Civil Grand Jury, 2010, p. 1). Individuals can no longer think of the government as the “cavalry” coming to the rescue after a disaster. Today’s realities, whether governmental, economic, demographic, or societal, have created a world where “a government-centric approach to disaster management will not be enough to meet the challenges posed by a catastrophic incident” (Federal Emergency Management Agency, 2011, p.2). In other words, the general public needs to take responsibility to “...decrease their own vulnerability and assist in the overall community response” (Haddow et al., 2011, p. 101). CERT is one avenue for self and community reliance in disaster and emergency preparedness.

FEMA has long recognized the value of CERT teams, referring to them as, “a solid example of a trained volunteer resource” (Federal Emergency Management Agency, 2012b). At the local level, a 2010 Santa Clara County Civil Grand Jury Report on disaster preparedness recommended that residents “learn to prepare for emergencies...assume responsibility for their own welfare...” (Santa Clara County Civil Grand Jury, 2010, p. 4), and participate in their local CERT (Santa Clara County Civil Grand Jury, 2010).

FEMA’s current philosophical approach to emergency management, Whole Community, embraces emergency management as a model based in the “grass-roots” concept. Whole Community recognizes that “successful, connected and committed communities...can

collectively achieve better outcomes in times of crises, while enhancing the resilience of our communities and the Nation” (Federal Emergency Management Agency, 2011, p. 23). FEMA’s Whole Community report, *A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action* is not the definitive final word on emergency management, rather it is a starting point to help emergency management practitioners meet the challenges of Whole Community at the local level (Federal Emergency Management Agency, 2011).

The starting point for this study of CERT level of participation in Santa Clara County was the results of an on-line survey that was part of the County of Santa Clara’s annex to the 2010 Association of Bay Area Governments (ABAG) Local Hazard Mitigation Plan, *Taming Natural Disasters*. As part of the Plan development process, in November 2010, the Local Planning Team (LPT) used the online survey to “request public input regarding concern for hazard risk” (County of Santa Clara, 2011a, p. 3-19). Question 6 of the survey specifically targeted CERT, asking respondents about their level of CERT involvement, i.e. were they involved, not involved but would like more information, or not interested in CERT. By January 17, 2011, the County had received 541 responses, out of over 1.7 million residents. While this response was not statistically significant it is an interesting reflection of community interest in and involvement in emergency preparedness. However, given the few pathways that were used for informing the public about the survey, it is not surprising that CERT members were overrepresented in survey responses, since CERT membership networks were one way survey participation was solicited.

In conjunction with the survey results, an examination of CERT programs for the fifteen cities in Santa Clara County was conducted. Endeavoring to determine factors which affect and/or predict levels of CERT participation, cities were polled on age of their CERT program, number of people trained, number of current active CERT members, cost of the program and

whether or not the city maintained contact with current active members, and if so, how? Data from thirteen of the fifteen cities was received and examined for this study.

One of the scholarly articles used as research for this paper, “Factors Predicting Individual Emergency Preparedness: A Multi-State Analysis of 2006 BRFSS Data” had not only concluded that individuals were not as prepared as they perceived themselves to be, but that “income and age were important predictors of disaster preparedness” (Ablah et al, 2009, p. 317). In this study, respondent age was not considered, but income levels were, and they did appear to have an influence on the level of CERT participation within the cities. As seen in the data from the Town of Los Gatos, the town reports that it currently has 222 active CERT members, an impressive number in a town of just fewer than 30,000 residents and when compared with the other cities in the county (in reference to Table 7). Considering median income, Los Gatos ranked in the top third of the county, coming in at 5th (Table 11), and in fact, the top five respondents to “yes, I am a member of CERT”, ranked in the top half for median incomes, with the exception of Sunnyvale, which ranked 11th (Table 11).

Three cities, Campbell, San Jose, and Santa Clara with median income levels ranking in the bottom third of the county, registered the highest percentages of respondents who answered “No, not interested in CERT” in the Local Hazard Mitigation Plan (LHMP) survey. These three cities were also in the bottom third of responses to the “Yes, I am a member of CERT” response choice. These observations suggest that individuals who are at the lower end of the income spectrum are not as likely to be participants in emergency preparedness. Jeanne-Marie Col, Associate Professor at John Jay College in New York, succinctly sums up this low income-low preparedness connection: “A poor person who cannot put food on the table or send their kids to

school is not going to be much interested in well-stocked go-bags” (J.Col, personal communication, November 18, 2012).

The question then remains as to how to engage the vulnerable segment of the population--the poor, the young, special needs and the aged population--in emergency preparedness programs such as CERT? One possible solution is for communities to use the strategic themes that are the cornerstone of FEMA’s Whole Community approach, such as understanding community complexity and recognizing the community’s capabilities and needs. Unless and until local officials and community leaders identify their vulnerable populations, and address the obstacles to their participation in emergency preparedness, the vulnerable populations will continue to be at increased risk from hazards and disasters. After Hurricane Katrina, thousands were affected, but the “individuals in poverty were most affected by the hurricane” (Burney, et al.,2007, p. 5).

In disasters such as Hurricane Katrina, the wealthy and the middle class are not as impacted as are the poor because they generally have more information, more resources and tend to be better prepared. As mentioned above, the top five respondents to “yes, I am a member of CERT”, ranked in the top half of countywide median incomes (Table 11). As these populations already exhibit a tendency to engage in emergency preparedness programs such as CERT, greater efforts can be made to increase participation from the wealthy and middle class, thereby creating a situation where the wealthy and middle class are self-sufficient, freeing up resources which can then be directed at the vulnerable population.

Ideally, all members of the community would participate in CERT programs, however, in communities with a greater number of poor people, it would require more work to increase CERT participation, along with taking longer to reach and engage this population. This is a tall

order in these economic times when many cities are running on bare bones staffing. Yet, if cities make the effort to engage the poor and vulnerable in minimal preparedness actions, such as CERT, the cities, in effect are making a low investment now in order to achieve a high benefit later (J.Col, personal communication, November 18, 2012).

Another potential predictor of CERT participation that was explored was longevity of the program within the individual cities, the theory being that a long-lived program would engender community support and participation by virtue of its familiarity. This does not appear to be the case, as demonstrated by cities like Santa Clara, which have had a CERT program since 1995, but only self-reported 20-50 active members; while cities like Los Gatos, where the CERT program has only existed since 2003, report 222 active members.

Within this study, Sunnyvale appeared to be something of an anomaly. The city ranked in the bottom third for median income, and theoretically, should have had a response similar to Campbell, Santa Clara and San Jose of a high rate of “not interested in CERT” responses and a low rate of “yes, I am a member of CERT.” Yet, Sunnyvale registered the highest response percentage to the “yes, I am a member of CERT” question, and one of the lowest percentages for the “no, I am not interested in CERT” question. Sunnyvale does have one of the oldest CERT programs in the county, called SNAP, in operation since 1986, but as was observed in other cities with long-lived programs like Santa Clara, that detail in and of itself does not appear to be a significant predictor of CERT participation. What Sunnyvale does have are 26 active and engaged neighborhood associations. These neighborhood associations appear to present an additional layer of community involvement that surmounts the obstacles suggested by the median income levels of the community. These observations suggest that when CERT program administration and recruitment is combined with additional community outreach efforts and

programs like Sunnyvale's neighborhood associations, CERT participation appears to be enhanced.

Finally, cities do not need to start from scratch in searching for means to enhance their CERT participation, as many cities already have resources and tools that can be used to augment their current CERT recruitment efforts. The City of San Jose has 51 community centers located throughout the city that can be venues for CERT recruitment and/or training. Numerous cities have local neighborhood papers and newsletters, *The Los Gatos Weekly Times*, *The Cupertino Courier*, for example, while other cities have begun to establish and use local "Patch" and *Yahoo! Groups* as a means for neighborhood residents to communicate with each other. These are all potential outreach resources. But, as tempting as it may be to disseminate information via the Internet, cities should first consider the results of a resident's survey done in Mountain View in 2006. One of the questions asked was, "How can the City of Mountain View provide you with information to help you prepare for an emergency?" (City of Mountain View, 2006, p.57). The top choice of forty-five percent of respondents was to have the information mailed to them through mediums such as pamphlets and newsletters. The second choice, at 17%, was to receive the information through the City's website (City of Mountain View, 2006). These numbers illustrate, while efficient and economical, the internet is not always the best choice for a city to use in communicating with its residents about emergency preparedness.

California is a seismically ticking time bomb that will sooner or later be rocked by "The Big One." At that point, the answer to the question of "when?" is going to become "right now!" When that happens, emergency preparedness programs such as CERT, can make the difference between being a survivor or becoming a statistic.

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APPENDIX A

Local Hazard Mitigation Plan Resident Survey

Santa Clara County and participating cities are currently updating the local annexes to "Taming Natural Disasters: Multi-Jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area" (<http://quake.abag.ca.gov/mitigation/>).

Your thoughts on natural hazard risk and mitigation are a critical component to this planning process. With your input, Santa Clara County and participating cities will be able to increase resiliency to natural hazards and reduce future damage to our community.

We know you are busy and respectfully request a few moments of your time to respond to the brief survey below.

*** 1. Using the drop down menu, please select the jurisdiction in which you live.**

Santa Clara County Jurisdictions:	Choose One <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div>
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*** 2. What is the ZIP code of your home?**

3. The Hazard Mitigation Planning Team identified the following hazards as having a potential to impact Santa Clara County. Please mark the FIVE (5) hazards that are of most concern to your neighborhood or home.

☐ Agricultural Pests and Diseases
☐ Bay Area Siltng
☐ Dam Failure
☐ Delta Levee Failure
☐ Disease and Outbreak
☐ Drought
☐ Earthquake: Ground Shaking
☐ Earthquake: Landslides
☐ Earthquake: Liquefaction
☐ Earthquake: Surface Rupture
☐ Expansive Soils
☐ Flood
☐ Freeze
☐ Halistorm
☐ Hazardous Materials Spills (chemical/biological)
☐ Heat (extreme heat) | ☐ Infrastructure: Water System Disruption (no potable water)
☐ Infrastructure: Electrical System Disruption (no power)
☐ Infrastructure: Energy System Disruption (no gas)
☐ Infrastructure: Wastewater System Disruption (sewer backup)
☐ Infrastructure: Telecommunication System Disruption (no phone / cell service)
☐ Infrastructure: Transportation Disruption (blocked roads / failed bridges)
☐ Land Subsidence (soil compaction due to subsurface water removal)
☐ Landslide and Debris flow
☐ Solar Storm
☐ Thunder/Lightning Storms
☐ Tornado
☐ Tsunami
☐ Volcano
☐ Wildfire
☐ Wind (high winds) |
|--|--|

Please list any additional hazards that present a threat to your neighborhood or home.

4. If a severe hazard event occurred today (large earthquake or dam failure) such that all services were cut off from your home (power, gas, water, sewer) and you were unable to leave or access a store for 72 hours, which of these items do you have readily available?

- ☐ Potable Water (3 gallons per person)
- ☐ Canned / Non-perishable Foods (ready to eat)
- ☐ Portable AM/FM Radio (solar powered, hand crank, or batteries)
- ☐ Handheld "Walkie-Talkie" Radios (with batteries)
- ☐ Flashlight (with batteries)
- ☐ Extra Medications
- ☐ First Aid Kit
- ☐ Blanket(s)
- ☐ Cash
- ☐ Important Family Photos/Documentation In a water and fire proof container

What else do you have in your emergency kit?

For more information on preparing an emergency kit, please visit: <http://www.ready.gov/america/getakit/index.html>

5. Are you familiar with the special needs of your neighbors in the event of a disaster situation?

- ☐ Yes
- ☐ No

6. Are you a trained member of your Community Emergency Response Team (CERT)? (Note: your community may use a different name than CERT such as SNAP, PANDA, San Jose Prepared, HEAT, SAFE, etc)

- ☐ Yes
- ☐ No, I would like to learn more about CERT.
- ☐ No, I am not interested in being a trained CERT member.

For more information about CERT, please visit: www.citizencorps.gov/cert. Please share with us why you are a trained CERT member or why you are not yet part of CERT.

7. What is the most important thing local government can do to help communities be more prepared for a disaster?

8. Do you live in an apartment building or home with living space above a garage or parking area?

☐ Yes

☐ No

If yes, please describe your level of concern for the building to collapse in a large earthquake event (none, little, moderate, high, extremely concerned)

9. If you are a homeowner, do you have adequate basic homeowners insurance to cover the hazards that could impact your home?

☐ Yes, my Insurance coverage should be adequate

☐ No, I don't believe my insurance coverage would be adequate for a major disaster

☐ Unsure

☐ I do not have an Insurance policy

☐ Not applicable, I rent my current residence

10. Do you have earthquake insurance for your home?

☐ Yes, I own my home and have earthquake insurance.

☐ Yes, I rent my home and have earthquake insurance.

☐ No, but I am interested in reviewing earthquake insurance options (<http://www.earthquakeauthority.com/>).

☐ No, earthquake insurance is too expensive.

☐ No, I do not need earthquake insurance.

11. Do you have flood insurance for your home?

☐ Yes, I own my home and have flood insurance.

☐ Yes, I rent my home and have flood insurance.

☐ No, but I am interested in reviewing flood insurance options (<http://www.floodsmart.gov/floodsmart/>).

☐ No, I do not need flood insurance.

12. Please note any additional insurance you have for your home or property. (fire, renter's insurance, etc.)

13. What are you doing on your property or within your home to reduce future damage from the identified hazards in question #2? (choose all that apply)

- ☐ Seismic retrofit of the structure and / or foundation
- ☐ House elevation or first floor modification to prevent flood damage
- ☐ Installed backflow prevention device(s)
- ☐ Defensible space landscaping (clear vegetation around house to reduce wildfire risk)
- ☐ Roof retrofit using fire resistant material
- ☐ Strengthened openings (Doors, windows, and/or garage door to reduce high-hazard wind risk)

Other (please specify)

14. Do you work in Santa Clara County?

- ☐ Yes
- ☐ No

If yes, please provide your workplace zip code.

15. Is your place of work in an area susceptible to natural hazards? (select all that apply)

☐ High-risk flood zone	☐ Landslide Risk Area
☐ Earthquake fault zone	☐ Wildland Urban Interface (wildfire risk area)
☐ Liquefaction zone	☐ I don't know

Other (please specify)

16. Does your employer have a plan for disaster recovery in place?

- ☐ Yes
- ☐ No
- ☐ I don't know

17. Does your employer have a workforce communications plan to implement following a disaster so they may contact you?

- ☐ Yes
- ☐ No
- ☐ I don't know

18. Please list any studies you are aware of conducted within your community or the county regarding the risk to future hazard events (i.e. unreinforced masonry or soft story building inventories, dam inundation analyses, etc.)

19. What recommendations do you have for Santa Clara County and the incorporated cities to improve identification, prioritization, and implementation of actions intended to reduce future damage and increase resiliency (i.e., retrofit infrastructure, upgrade building codes)?

20. Please recommend any companies or local associations that should be involved in the Santa Clara County hazard mitigation planning process.

#1 Company/Association Name:	<input type="text"/>
Contact Name:	<input type="text"/>
Contact Email:	<input type="text"/>
Contact Phone Number:	<input type="text"/>
#2 Company/Association Name:	<input type="text"/>
Contact Name:	<input type="text"/>
Contact Email:	<input type="text"/>
Contact Phone Number:	<input type="text"/>

21. Would you like to review and comment on a draft of your jurisdiction's annex to the Multi-Jurisdictional Multi-Hazard Mitigation Plan?

- ☐ Yes
- ☐ No

If yes, please provide your name, email address, and jurisdiction of interest (County or City).

22. Please provide us with any additional comments/suggestions/questions that you have regarding your risk to future hazard events.

Thank you for taking the time to complete this survey. If you have any questions regarding this survey you may contact Corinne Bartshire at cbartshire@dewberry.com or 510.834.3326.