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FINDINGS FROM THE SOUTHERN CALIFORNIA PUBLIC OPINION SURVEY (SCS)

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SoCal Residents Expect Major Quake Within Five Years

INTRODUCTION

Public opinion surveys can play an important role in decision making as they gather information that complements data from standard sources such as the Decennial Census and Current Population Survey. This Fact Sheet presents findings from a recently completed survey of Southern California residents (those living in the counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura). Details of the survey can be found in the appendix. The information from the survey can help better inform elected officials about the public's concerns and priorities, such as the prospect of a major earthquake and local officials' preparedness for such an event. Our main finding is that over three-quarters of Southern California residents think it is likely that we will have a major earthquake in the next five years. This level of concern cuts across demographic groups.

BACKGROUND

California has the distinction of having the most damaging earthquakes in the United States (it shares with Alaska the honors for most earthquakes). Each year the Southern California region has about 10,000 earthquakes, according to the U.S. Geological Service. Most are small; only about 15-20 are greater than magnitude 4.0. However, in January 1994 the Los Angeles area was hit by the 6.7 magnitude Northridge quake, the first earthquake to directly hit an urban area in the United States since 1933. According to reports, the damage from the quake was extensive. Over 50 people died and more than 9,000 were injured. Freeway sections, parking lots, and office buildings collapsed, while several apartment buildings were severely damaged. More than 20,000 were displaced from their homes (SCEDC). Estimates of the damage are in the \$20 billion range, making Northridge the most costly earthquake in U.S. history.

ABOUT THE AUTHORS

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EARTHQUAKE HAZARDS IN THE REGION

The California Geological Survey (CGS), as required by Seismic Hazards Mapping Act, must designate risk zones in both Northern California (the Bay Area) and Southern California (the Greater Los Angeles area, including both Ventura and Orange Counties). These risk zones are designated as either Landslide Zones, Liquefaction Zones, or both based upon the local land's propensity to either slide or liquefy during an earthquake¹. By merging data on liquefaction and landslide zones with U.S. Census block level population data, it is possible to roughly estimate the number of people who live on or near these hazard zones. The hazard data exists in Southern California only for Los Angeles, Orange, and Ventura Counties, and so counts were only tabulated for these three counties, rather than the more general five-county region.

By land area, liquefaction zones make up 12.0 percent of Los Angeles county, 27.5 percent of Orange County, and 11.5 percent of Ventura County, while landslide zones represent 10.8 percent, 16.5 percent, and 17.9 percent of those counties' respective land areas². The percentage of land area that represented hazard zones was calculated for each Census block (the smallest Census geography available) and an arbitrary break point of 90 percent land area in one of the hazard zones was set. The difference between populations living near landslide zones versus living near liquefaction zones was very clear. Only 0.06 percent of the population of Los Angeles County lived within those blocks that had more than 90 percent of their area in landslide zones; the same percentages for Orange and Ventura were, respectively, 0.32 percent and 0.04 percent. These combined for a grand total of just over 15,000 people. On the other hand, 31.2 percent of the population of Los Angeles County—representing almost 3 million people (2,970,500)—are living within or very near liquefaction hazard zones. For Orange and Ventura counties, respectively, 41.9 percent and 44.8 percent of the populations lived in such blocks (representing 1,192,426 and 337,018 people).

OVERVIEW OF EARTHQUAKE CONCERNS AND LOCAL GOVERNMENT PREPAREDNESS

Although scientists are not able to predict a major earthquake, based on probabilities they do estimate that in the next 30 years there is a 60 percent chance that there will be a major quake in Southern California (USGS). The vast majority of Southern Californians believe we will have a major quake even sooner. Over 80 percent think it is likely we will have a major quake in the next five years (see Figure 1). (For comparison, only 60 percent think a terrorist attack is likely in the next two years). However, residents were split almost evenly on whether or not such a quake would cause personal harm (see Figure 2).

Figure 1: Likelihood of a Major Earthquake in So. CA in Next Five Years

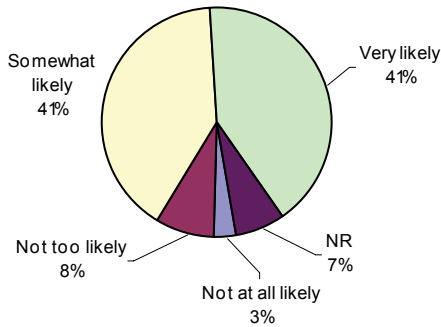
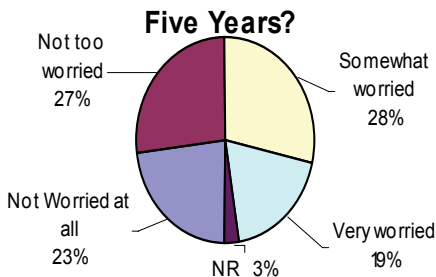


Figure 2: How Worried are You that You or Someone in Your Family will be Harmed by an Earthquake in the Next Five Years?



Southern Californians are confident in their local government's ability to respond to a major earthquake. Over 80 percent have at least a fair amount of confidence that their local government will respond quickly and effectively in the aftermath of a quake (see Figure 3). And 38 percent feel that their local officials have been doing a generally adequate job of preparing for a major quake. Only 24 percent thought that they have been doing an inadequate job. (Another quarter gave a mixed response, while the remainder did not know or did not respond, see Figure 4). And residents themselves are preparing for a large quake—65 percent said they had an emergency preparedness kit at home (see Figure 5).

Figure 3: Confidence in Local Government to Respond to a Major Earthquake

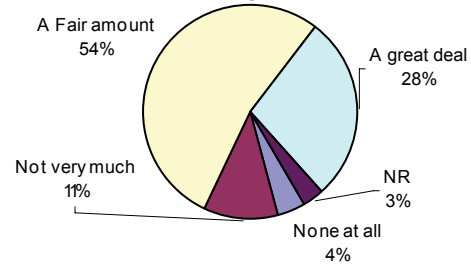


Figure 4: Performance of Local Elected Officials in Preparing for an Earthquake

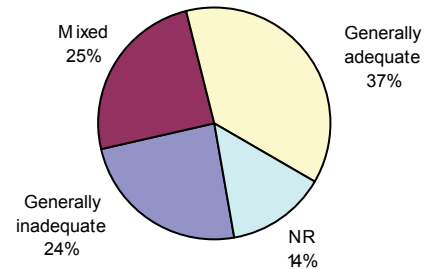
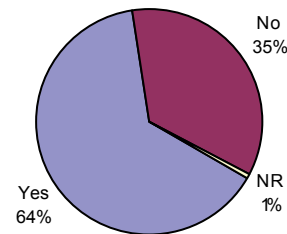


Figure 5: Do You Have an Emergency Preparedness Kit at Home?

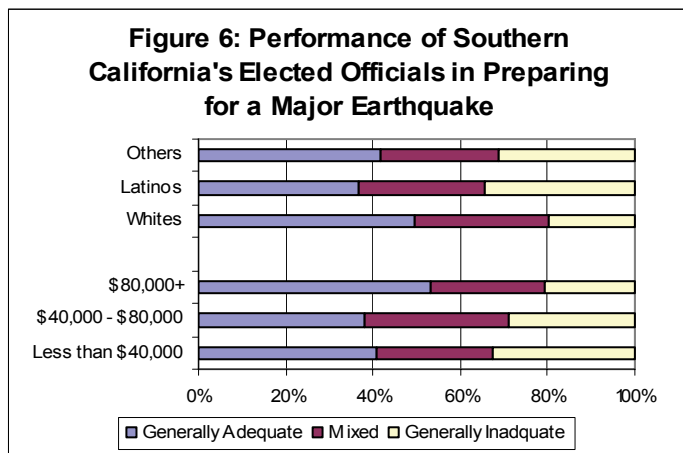


GROUP DIFFERENCES IN EARTHQUAKE RISK, CONFIDENCE IN OFFICIALS AND PREPAREDNESS

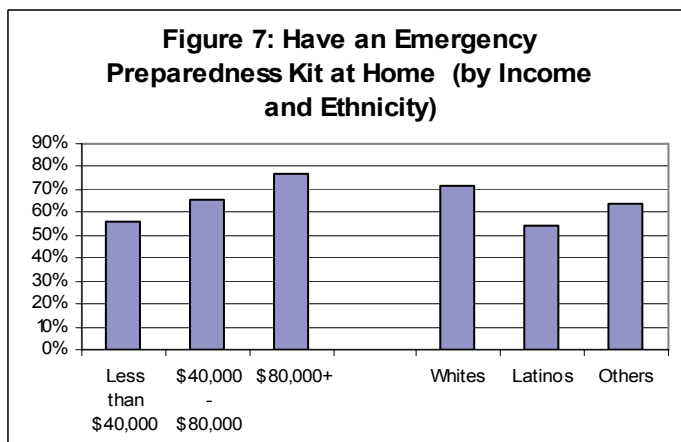
Concerns about the likelihood of a major earthquake, and opinions about government response to, and preparedness for, earthquakes, are issues that cut across ethnic and class lines. We found virtually no differences in the perceived likelihood of a major earthquake according to demographic characteristics. 85-90 percent of residents in each demographic group think a major earthquake is "likely" in the next five years regardless of age, race, education, or income. In addition, most Southern California residents have confidence in their local government's ability to respond quickly and effectively in the aftermath of a major earthquake. Again, 80-90 percent of respondents in each demographic group had at least a fair amount of confidence in the earthquake response capabilities of their local government. When asked about their local officials' performance in preparing for

a major earthquake in the region, a majority still give either a “mixed” or “generally adequate” response. But here we do see some slight differences among groups by income and ethnicity.

While 53 percent of those making \$80,000 per year or more say their local officials are doing a “generally adequate” job of preparing for an earthquake, only 38 percent of those making \$40,000-\$80,000 and 41 percent of those making less than \$40,000 offered this response (see Figure 6).

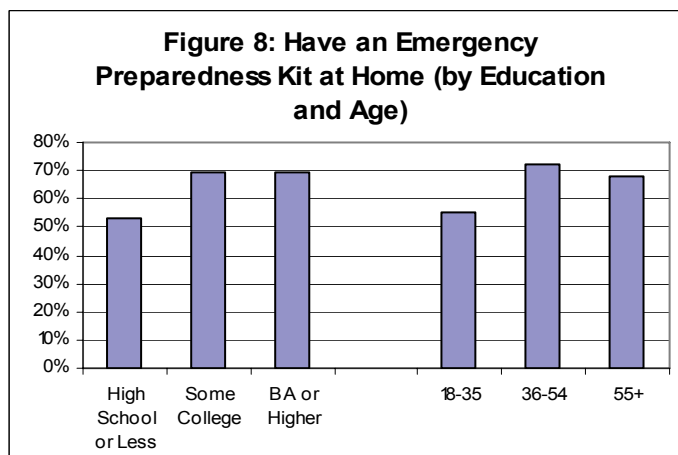


Whites also were slightly more likely to give local officials higher marks for earthquake preparedness; 49 percent of whites think their officials are doing a “generally adequate” job, versus only 37 percent of Latinos and 42 percent of those in other³ ethnic groups. However, those groups who gave government higher marks for earthquake preparedness were also more likely to be prepared themselves. For example, 77 percent of those in the highest income category reported having an emergency preparedness kit at home, versus 65 percent of those in the middle income category and 56 percent of those in the lowest income category (see Figure 7).



Whites were also most likely to have an emergency kit at home (72 percent) while Latinos were least likely to have one (54 percent). Their own levels of preparedness may factor into their ratings of local government preparedness, along with their overall perception of neighbor-

hood services. This may be a result of the highly segregated nature of Southern California’s communities. Higher income neighborhoods and cities, which also tend to be whiter than other areas, undoubtedly receive better services in general. As for other demographic differences in emergency preparedness, only 53 percent of those with a high school degree or less had an emergency preparedness kit at home, versus 69 percent of those with some college education or higher. And finally, those over 35 were more likely to have an emergency kit than younger residents (see Figure 8).



APPENDIX: SOUTHERN CALIFORNIA PUBLIC OPINION SURVEY, 2005

The 2005 Southern California Public Opinion Survey is supported by the UCLA Ralph and Goldy Lewis Center for Regional Policy Studies and is designed to gather the views and opinions of Southern California residents on critical public policy issues in this region. The survey was developed with input from the campus and community organizations. UCLA units include the Center for Communications and Community, the Institute for Transportation Studies, the Center for Civil Society, and the Anderson School of Management. Three public agencies participated in the process, the Southern California Association of Governments (SCAG), the Metropolitan Transportation Agency (MTA) and the Los Angeles Economic Development Corporation (LAEDC). Several UCLA faculty provided valuable input: Professors Vickie Mays, Michael Stoll, Brian Taylor, Amy Zegart, Frank Gilliam, Helmut Anheier, Chris Thornberg, and Ed Leamer.

The 2005 Survey gathered basic demographic data and covered seven topical areas: 1) major issues facing the region, 2) the efficacy of local government, 3) transportation, 4) the state of the regional economy, 5) housing, 6) civic engagement, and 7) major disasters. When possible, questions were worded to parallel existing questions from other surveys. Half of respondents were asked questions related to earthquakes.

The Survey was conducted in English and Spanish during the months of January and February 2005 using random digit dialing, and the data were collected by The Social Science Research Center at California State University, Fullerton. There are 1544 completed surveys for the five counties: Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The sample is divided proportionally by county household population. The characteristics of the sample by age, ethnicity, income, and home ownership categories are consistent with the 2004 March Current Population Survey. There is a sampling error of +/- 2.6 percent at the 95 percent confidence level for the full sample, and +/- 3.7 percent for the subsample answering the questions related to earthquakes. (Sampling error may be larger for subpopulations).

¹ Extensive descriptions of the criteria for designation as a landslide or liquefaction zone can be found in the CGS's Special Publications 117 and 118. More information on earthquake hazards and their mapping, including the disclosure requirement for home buyers, can be found at <http://gmw.consrv.ca.gov/shmp/index.htm>.

² It should be noted that hazard data exists mostly in and around relatively well populated areas and so these percentages should be viewed as low bounds with respect to the whole counties. For example, data does not exist for much of the desert and very mountainous regions of Los Angeles County.

³ "Other" includes Asians, African-Americans, and mixed ethnicities, as well as respondents who did not indicate their ethnicity on the survey.

RECOMMENDED CITATION

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ACKNOWLEDGEMENTS

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DISCLAIMER

Neither the University of California, the School of Public Affairs nor the Lewis Center for Regional Policy Studies either support or disavow the findings in any project, report, paper, or research listed herein. University affiliations are for identification only; the University is not involved in or responsible for the project.

REFERENCES

Southern California Earthquake Data Center. (2005). <http://www.data.scec.org/index.html>. Accessed March 20, 2005.

U.S. Geological Survey. (2005). <http://earthquake.usgs.gov/>. Accessed March 20, 2005.

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