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This volume is part of a study investigating individual and community response to earthquake threat in southern California. The overall objective is to provide a basis for understanding community response to earthquake predictions released to the public. Collective responses to earthquake threat are examined, including actions taken by formal and informal groups. Methodology used to identify and gather information from groups that have held at least one meeting on an earthquake topic during an 18-month period is reviewed. Described are the types of meetings held, characteristics of attendees, and the extent to which the groups have become involved in earthquake related concerns. A theoretical model is developed to explain the various forms of involvement. Other areas examined include resistance to seismic safety legislation and the process of information seeking by southern Californians. Interview schedules for both preliminary informants and meeting informants and a codebook for meeting informants' interviews comprise the appendices.

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COMMUNITY RESPONSE TO EARTHQUAKE THREAT IN SOUTHERN CALIFORNIA

* * *

PART EIGHT

GRASS ROOTS ORGANIZATION AND RESISTANCE

* * *

Final technical report on National Science Foundation grants NSF ENV76-24154 and NSF-PFR78-23887, from 1976 to 1980, including preliminary work under US Geological Survey Grant 14-08-0001-G-347 in 1976. Any opinions, findings, conclusions, or recommendations are those of the authors and do not necessarily reflect the views of the Foundation or the Survey.

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1980

THE REPORT

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Part Eight was written primarily by Joanne Nigg. Barbara Young collaborated in some portions of the manuscript. The case study of the Los Angeles building and safety issue was written by Sharon Stevens and Denise Paz. Jill Kiecolt and Gerald Goetsch contributed in the statistical analysis.

PART EIGHT

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CHAPTER ONE

INFORMATION SEEKING

The preceding sections of this report have analyzed individual knowledge and awareness of earthquake threat and the responses to it. In contrast, this section will look at collective responses to earthquake threat. Collective response will include the actions taken by formal organizations, informal groups, and more diffuse types of collectivities such as publics and crowds.

Chapter One will focus on the process of information seeking as it relates to significant earthquake events. By monitoring the increase in public information seeking attempts, we can discover what events capture and focus the attention of the public on earthquake threat.

The response of "civilian" groups and organizations is investigated in Chapters Two through Six. Chapter Two reviews the methodology used to identify and gather information from groups that held at least one meeting on an earthquake topic during an eighteen month period. Chapter Three is a general description of these "attending" groups and the types of meetings which they held. Chapter Four looks at the extent to which groups became involved in earthquake-related concerns, and Chapter Five presents a theoretical model to explain the types of involvement found.

Chapter Six compares the pattern of group meetings with the pattern of information seeking. Although meetings do not appear to be related to significant earthquake events in the same manner that information seeking is, explanations for this "lag" phenomenon are presented.

Chapters Seven and Eight concentrate on resistance to the passage and implementation of seismic safety legislation which directly affects local communities. Because of the widespread and lengthy media coverage given to the Seismic Ordinance (Part Two) and because of the overwhelming favorable sentiment toward that ordinance found in our surveys (Part Five), an in-depth case study of the resistance that developed to that ordinance is presented in Chapter Seven. Chapter Eight reviews three instances of community resistance to seismic safety legislation which occurred in southern California during our two year study and suggests reasons for the apparently "anti-safety" stance of the involved publics.

This chapter will investigate the process of information seeking by southern Californians as it relates to earthquakes and earthquake prediction events. After reviewing the patterns of information seeking, situational factors that mobilized people to contact expert sources will be identified.

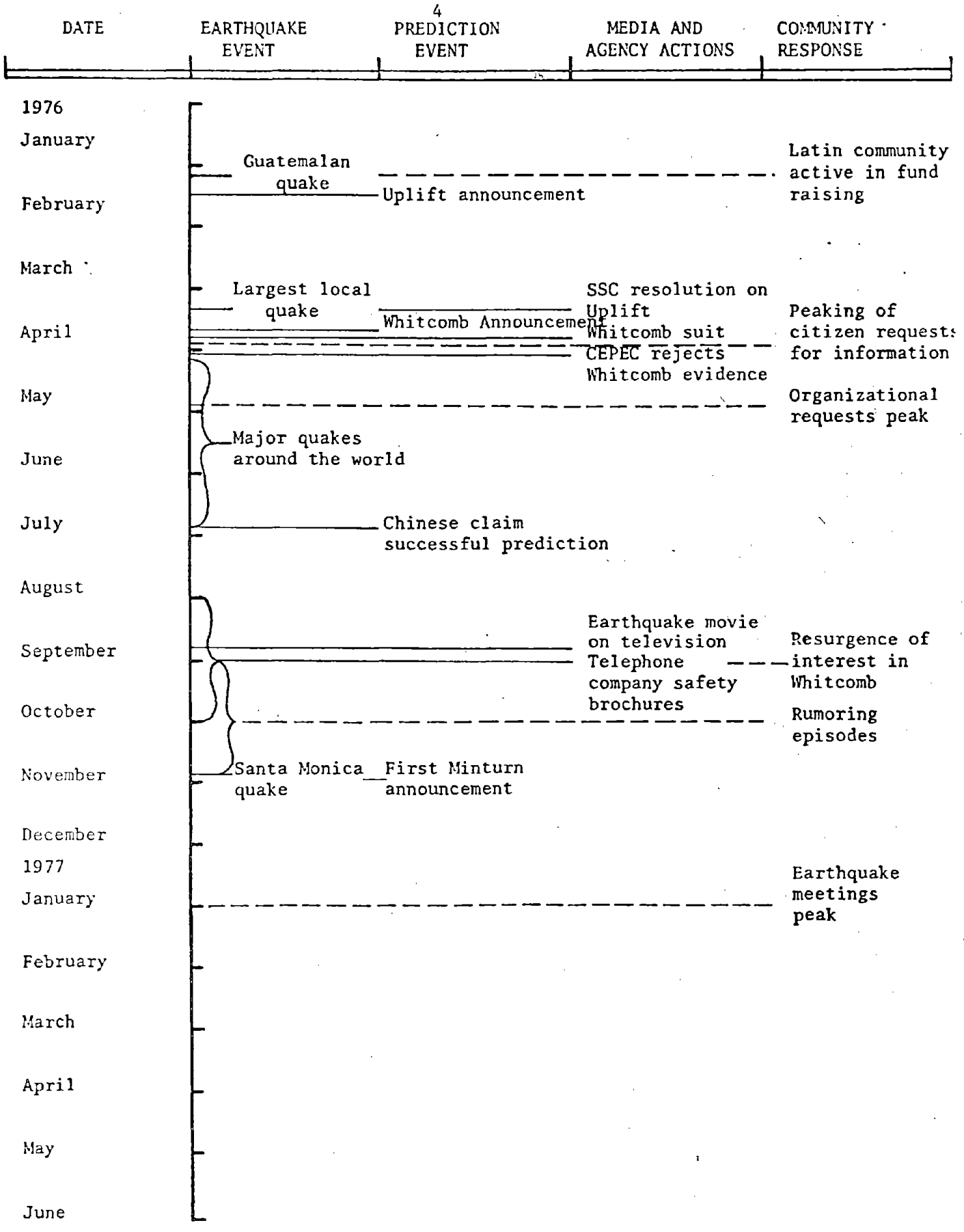
Information seeking is defined here as inquiries made by individuals and collectivities to attain additional information on earthquake-related topics from "experts" in scientific and preparedness institutions and agencies. We have purposely restricted our discussion in this chapter to one aspect of the more general information-exchange process. We do not intend to imply that information seeking takes place independently from the give-and-take processes in interpersonal discussions. Rather, this formalized information-seeking activity should be seen as a supplementary channel for information to be acquired and then used in an individual's informal communication networks.

Community requests for expert information on earthquake-related subjects were monitored over a three year period. Relations were established with organizations that routinely provide pamphlets, books, speakers, movies,

and experts on emergency planning and earthquake preparedness and with organizations which were frequently contacted for information on earthquake events and predictions. These organizations include the California Division of Mines and Geology, California Institute of Technology (Caltech), Civil Defense offices, Los Angeles City Fire Department, Los Angeles County Sheriff's Department, Los Angeles Police Department, Los Angeles Public Library, California Office of Emergency Services, the Red Cross, California Seismic Safety Commission, and the United States Geological Survey. Periodic reinterviews were conducted with organizational members who routinely handled information requests, and correspondence files of these agencies were reviewed to determine the content and volume of these inquiries.

These information-seeking inquiries can be categorized into two general types, based on the seeker's purpose in making the contact--to get additional information on earthquakes or predictions, and to get information on preparedness. The first type of inquiry is usually addressed to scientific experts, the second to those who are responsible for the safety and welfare of local citizens.

In order to be able to put these information-seeking attempts into perspective, a time line of significant events (Figure 1) has been constructed for the eighteen months period covered in Part Eight. Information from Part Two has been used to select the significant earthquake events, prediction events, and media and agency actions. Events indicating community response will generally be developed in this section of our report.



TIME LINE OF SIGNIFICANT EVENTS

FIGURE 1

General Inquiries on Earthquakes and Earthquake Predictions

This section will concentrate on the content of questions asked by the public on general aspects of earthquake prediction or on earthquake events. These inquiries usually asked about the "state of the art," whether earthquakes can now actually be predicted, what types of instrumentation or theories are used in prediction, the causes of earthquakes, information on various earthquakes around the world or in the past, and concerns that the individual has over anticipated future quakes.

Certain earthquake-related topics are the subjects of individual information-seeking attempts directed toward a wide range of experts. For example, almost all local agencies in which representatives were interviewed received three general types of questions: (1) Where are the safest locations to live in southern California; (2) what was the magnitude, intensity, date, etc., of a specific earthquake (the most frequently mentioned were the 1906 San Francisco earthquake and the 1971 San Fernando-Sylmar earthquake), and (3) what causes earthquakes to occur?

The findings of a short survey of earthquake-related inquiries received by Los Angeles city librarians may help to detail the content of such requests and their frequency. With the generous cooperation of the Los Angeles City Librarian, a brief questionnaire was mailed to all reference librarians in the central and branch public libraries of the City of Los Angeles in July, 1976. The questionnaires, with cover letter and return-addressed envelope, were distributed to the 61 branches and departments. Forty-eight questionnaires were completed and returned for a completion rate of 79 percent. Reference libraians were the chosen informants because they are the library officials most frequently consulted by people who are looking for technical information or information on specific topics.

TABLE 1

"DO THERE SEEM TO BE ANY TOPICS ON EARTHQUAKES THAT PEOPLE PARTICULARLY WANT TO KNOW ABOUT OR THAT THEY MENTIONED FREQUENTLY?"

Response category	Frequency	Percent*
Fault maps	19	82.6
Earthquake occurrences and their destructiveness	13	56.5
Earthquake preparedness and survival information	11	47.8
Predictions	4	17.4
Causes of earthquakes	2	8.7
Building safety codes	2	8.7
Other	2	8.7

* The percentages total more than 100% because multiple answers were given by some librarians. These figures are based on 23 questionnaires.

When asked whether they had received any requests for information on earthquakes since the beginning of 1976, 79 percent of the librarians (38 of the 48 who returned questionnaires) indicated they had. However, when asked how the frequency of these requests compared with previous years, 75 percent replied that the number was "about the same." Only 6 percent felt that requests had increased, while 6 percent felt they had decreased. One librarian commented that there was always a "small but fairly steady demand" for earthquake materials. Apparently the libraries experienced no marked increase in information-seeking behavior by Los Angeles city residents during the first six months of 1976 despite the Whitcomb and Uplift announcements. However, there had been sufficient interest in the topic of earthquakes since the beginning of 1976 for six of these libraries to feature earthquake-related displays, for two libraries to present speakers and films on earthquakes and earthquake preparation, and for two libraries to schedule future programs on earthquake subjects.

The librarians were asked to specify the content of their patrons' requests (Table 1) and the patrons' reasons for seeking that particular information (see Table 2). According to Table 1, very few librarians recalled that people were specifically looking for more information on predictions (17.4%), and an even smaller proportion (9.7%) recalled hearing predictions mentioned as the motivation for seeking additional information. The data suggest that general public information seeking is less frequent than requests from two groups motivated by particular interests--students and people concerned about the location of faults.

First, educators have made earthquakes the basis for class assignments. Teachers often try to build "units" (lectures, discussions, readings, and reports on a specific subject) around topical issues as indicated by media attention and student interest. Over 90 percent of the librarians gave

TABLE 2

"DO YOU RECALL PEOPLE MENTIONING WHY THEY WERE REQUESTING INFORMATION ON EARTHQUAKES?"

Response category	Frequency	Percent[1]
School assignments	28	90.3%
Proximity of residence to a fault	9	29.0
Fear or anxiety about possibility of a future earthquake	6	19.4
Caltech prediction[2]	2	6.5
Palmdale upthrust[2]	1	3.2
General interest or curiosity	9	29.0
Other	2	6.5

[1]The percentages total more than 100% because multiple answers were given by some librarians. These figures are from the 31 questionnaires in which librarians replied affirmatively to the question.

[2]This category uses the librarians' actual wording.

"school assignments" as the patrons' motivation for requesting information, making students the most frequently cited group engaging in this general information-seeking behavior (Table 2).

People concerned about the geographical location of faults were the second most frequent group contacting the librarians. Requests for fault maps were received by almost 83 percent of the librarians (Table 1). Twenty-nine percent of the librarians recalled patrons mentioning that they were particularly interested in determining the proximity of their residences to earthquake faults. In their additional comments, the librarians indicated that several people who fell into this category mentioned the possibility of moving if their present residences were near a fault. Others indicated that they were thinking of moving and wanted to locate in areas that were relatively "fault-free."

In general, it appears that if the southern California Uplift and Whitcomb announcements stirred people to make library inquiries, the effect was only to maintain a constant modest level of demand or to counter a decline of interest since the 1971 San Fernando-Sylmar earthquake. The greatest demand was from students in response to school assignments, while adult concerns most commonly were directed toward specific information about fault locations rather than general scientific or household preparedness knowledge.

Although the bulk of the requests received by USGS and Caltech are similar to those received by the librarians, they also receive inquiries of a more scientifically sophisticated nature. For example, during the winter of 1977, with its record-breaking rains, Caltech received several calls from people asking whether such heavy rains would trigger earthquakes in the near future. USGS' earthquake prediction branch in Menlo Park received a letter from a concerned citizen who asked whether a destructive earthquake could be

caused by political terrorists setting off a nuclear device on an active fault. USGS also received a couple of inquiries in the late summer of 1976 asking whether damaging earthquakes were becoming more frequent, if not daily, occurrences. Other types of inquiries received by USGS included: why can the Chinese predict earthquakes and we can't; can California actually break off at the San Andreas fault and fall into the Pacific Ocean; how frequently do destructive earthquakes occur; and is there any pattern to their occurence?

Both Caltech and USGS also receive general inquiries about earthquake prediction. For example, a typical letter received by USGS reads:

> Is there any information you could send me about earthquakes? Lately, the reports and predictions have worried me. (Dated 12-10-76).

Caltech also receives questions on earthquake predictions. After the first television presentation of the movie "Earthquake," many callers contacted the Seismology Laboratory to ask whether scientists could really predict earthquakes at the present time. Many inquiries are also received by Caltech's Public Relations office from people who already assume that earthquakes can be predicted and want to ask questions about the next coming quake. Often, these people seem genuinely surprised to learn that scientific prediction techniques have not yet been developed to that extent.

The state Seismic Safety Commission (SSC) averages slightly less than six written inquiries from the general public per month. The inquiries they receive are usually in reference to fault locations and safe places for people to live in various geographical areas. Unlike the other agencies, SSC also receives questions concerning the safety of residential and building construction.

Radio talk shows also provide an opportunity for people to inquire about general earthquake-related topics. For example, on one late-night talk show in Los Angeles where earthquakes were not mentioned as a subject for discussion, the following exchange was recorded:

> Caller: "I'd like to talk about earthquakes. I'd like to know more about earthquake predictions. Have you heard anything?"
>
> Host: "What specifically are you referring to?"
>
> C: "Well, I live in Chico, that's 20 miles from Oroville. You know, that's where the earthquakes started . . . about a year ago and since then we've had hundreds. I heard a physicist on TV two weeks ago. He's been making lots of tests around here. He's taking samples of well water, looking for radon in it. And about a week ago, we had another earthquake. Then they took more tests that showed that radon was definitely present in the water. Do you know anything more about this? Have they made any more predictions?"
>
> H: "Well, I don't know about any specific predictions lately. I do know that the scientists are making several kinds of tests now. And this isn't really new. In China, they've been doing experiments with sound waves through the ground--you know, setting off explosions--and taking ground temperature, lots of tests on different things. But these are tests of theories that the scientists have . . ."
>
> C: "Yes, China's been doing these predictions successfully for many years now. But they're not letting their secrets out. I don't know why, maybe their government. They're making lots of tests around the dam here lately. Creating shock waves by setting off explosions to see what the dam will do. And now they've found radon present in the water. But that's the last we heard. Living in a small town, you hear things, get interested, then nothing. I was just wondering if the news in a more metropolitan area like Los Angeles had any more information."

Even though the caller was not from the Los Angeles area, she or he was attempting to seek out additional information from a media source she or he thought might have access to such information.

The Minturn prediction in December 1976 (to be discussed more fully in the next section) was cited as the reason for dedicating two three-hour radio talk shows specifically to questions people wanted to ask about earthquakes and earthquake predictions. Some of the inquiries on these programs included:

Detailed measurements have shown that the west side of the fault in northern California is moving north at a rate of about two inches per year. During the San Francisco earthquake, the fault moved between fifteen and twenty feet and then became released for strain to accumulate for a hundred year period. Since that time, since 1957, the southern portion of the fault in Los Angeles has not moved. Now here's the jackpot. The locked portion of the southern fault is probably between fifteen and twenty feet. Now in a hundred and twenty years, with the two inches a year, that comes out to 240 inches or twenty feet, you see. Now, does this mean that the great quake that hit southern California in 1857 is due in 1977?

Hi. I was wondering how it would be in a mobile home? I just moved into one and I don't know what precautions to take.

Is Orange County close to the fault?

I live in a red brick apartment building that has four floors and eight apartments on each floor. Now I'm wondering, should we run out into our hall, outside of our apartment, in the event there's a quake?

As can be seen from these examples, general questions on earthquakes, earthquake prediction, and related issues and consequences were addressed to several experts or resource agencies and organizations. To put these requests into perspective against background events is difficult due to the inadequate record keeping of such requests in the pertinent organizations. However, because of the more specialized staffing patterns and priorities at USGS, such information was available on both general inquiries and on prediction or more technical inquiries. Written information inquiries sent to USGS were handled either by the Earthquake Prediction Branch if the request was primarily technical in nature, or by USGS's Public Relations office if the request was generally oriented toward earthquake safety concerns and could be handled by simply mailing out a standard pamphlet series. Phone inquiries, unless directed toward a particular researcher, were all handled by the Public Relations office.

Between July, 1976, and October, 1977, the earthquake prediction section received less than six technically-oriented written inquiries per month on the average, only 15 (11.7%) of which came from southern California residents.

The Public Relations office requests for more general types of information averaged 75 per month for both phone and written requests and almost fifty for written requests alone. Table 3 gives a monthly breakdown of the more technical requests, and Table 4 gives quarterly totals of the more general earthquake-related information inquiries.

As both of these tables illustrate, an impressive increase in information-seeking requests occurred near the end of 1976 and the beginning of 1977. For the general information requests (reflected in Table 4), the increase in inquiries during the fourth quarter of 1976 was almost totally due to responses to the phone companies' advertisement of earthquake information.

Along with their September-October bills, the telephone companies included a pamphlet (in both English and Spanish) on what to do before, during, and immediately after an earthquake. The front of the pamphlet read, "The two minutes it takes to read this could be the two minutes that save your life." If people wanted to know more, they were given the addresses of agencies that could provide additional information. USGS in Menlo Park was one of these agencies. Of the inquiries they received between October and December, 708 mentioned the brochure as their reason for requesting information, 465 of them in October alone. The Seismic Safety Commission (the first agency listed on the brochure), received over 1000 requests for additional information by January, 1977, which were a result of the phone companies' "advertisement."

The increase in requests for technical and prediction information received by USGS also increased dramatically (Table 3), but not until January, 1977. Most of these inquiries pertained to questions about specific predictions for earthquakes which the letter writer had heard. Because most of these letters were attempts to "clarify" a prediction, which often sounded like the Minturn prediction in November, 1976, these inquiries will be dealt with in the next section.

TABLE 3

TECHNICAL AND PREDICTION WRITTEN REQUESTS FOR INFORMATION ADDRESSED TO USGS
JULY 1976 TO OCTOBER 1977

	Month	Number of requests
1976	July	2
	August	0
	September	0
	October	2
	November	5
	December	2
1977	January	22
	February	16
	March	18
	April	8
	May	9
	June	4
	July	0
	August	0
	September	0
	October	1
	Total	89

TABLE 4

GENERAL EARTHQUAKE-RELATED INFORMATION REQUESTS ADDRESSED TO USGS: JANUARY 1976 TO DECEMBER 1977

Quarterly periods		Letters	Phone calls	Total
1976	January 1 - March 31	98	60	158
	April 1 - June 30	78	94	172
	July 1 - September 30	67	86	153
	October 1 - December 31	602	63	665
1977	January 1 - March 31	157	83	240
	April 1 - June 30	78	72	150
	July 1 - September 30	54	93	147
	October 1 - December 31	58	54	112
	Total	1192	605	1797

Clarification of an Event

Attempts to clarify an earthquake or prediction event fall into three categories--(1) confirming an earthquake occurrence, (2) "pinning down" a prediction, and (3) rumoring. In all instances of clarification, individuals were the sole information-seekers. As far as can be determined, no collectivities initiated information-seeking activities specifically for the purpose of clarifying an event. However, it is unknown how many individual inquiries were made on the basis of interactions within groups or networks where additional information was needed to clarify the event under discussion.

Confirming an earthquake occurrence. Caltech, fire and police stations, and radio stations (especially those with a talk show format) reported that after slight tremors switchboards usually "light up" with calls from people asking whether an earthquake did, in fact, just occur. Even though none of the tremors experienced in Los Angeles county during the three years of our study was severe enough to cause extensive peoperty damage or injuries to residents (the largest during our study period measured 4.6 on the Richter scale in the greater Los Angeles area), there seems to be a need for some residents to affirm for themselves that an earthquake has occurred. Once assured of this, they usually ask more specific questions: "where was it centered," "how large was it," "did it cause any damage," or "how long did it last?" When police, fire, and radio stations receive a few such calls, they usually contact Caltech's Seismology Laboratory to get specific information on the quake's occurrence in order to satisfy their callers. Such clarification episodes are usually quite brief, involving only the period immediately following the quake's impact. Within an hour or two the radio stations usually include a reference to the quake in their regularly scheduled news broadcasts.

A spokesperson for the Seismology Laboratory who usually handles inquiries from the public reports that a few "false alarm" quakes are reported almost daily. People call in asking whether a quake has occurred in their area because they felt a shaking, heard glasses rattling, or heard a low rumbling (a phenomenon which may accompany larger quakes). Once assured that no quake has occurred, the callers reportedly attribute the phenomenon they observed or experienced to some other cause (e.g., sonic booms, trucks going by, large machinery at work, etc.).

This type of clarification inquiry, although short-lived and relatively small in scope, may present unanticipated problems for emergency response agencies in the event that a large magnitude earthquake occurs. People in areas outside of the major impact area may experience the same types of phenomena that they now experience when a minor quake shakes their immediate area. These clarification calls, possibly magnified by the greater areas affected by the quake, may cause a tie-up of phone lines necessary for emergency communications. Such information seeking, which is routinely handled on a daily basis by "expert" sources, may become problematic for those same experts following an earthquake disaster and may lead to the callers being identified in a very negative manner as "curiosity seekers." Those who make such clarification inquiries, in other words, may be responded to in very different ways depending on the magnitude of the earthquake and the damage it creates.

"Pinning down" a prediction. Clarification of an actual earthquake prediction--the southern California Uplift, Whitcomb's hypothesis test, Minturn's prediction, or one of the many psychic announcements--took the form of trying to "pin down" the specific parameters of predictions which were originally vague. Although "pinning down" and rumoring (to be discussed in the next section) share many similar features, they are being separated

here for analytic purposes in order to look at public responses to actually-issued earthquake predictions. These prediction-specific requests for information from the public were directed toward scientific organizations, primarily USGS and Caltech.

Between January, 1976, and October, 1977, only two letters (1.5%) to USGS specifically requested additional information on the southern California Uplift (the "Palmdale bulge"). According to interviews conducted with various USGS researchers and staff people (both in Menlo Park and in Golden, Colorado at USGS' National Earthquake Information Center), the southern California Uplift did not seem to generate much earthquake concern requiring expert clarification for the general public at the time of its initial announcement.

Caltech researchers also stated that few requests for information on the Uplift were made either to the Public Relations office or to the Seismology Laboratory after the initial announcement. However, the Laboratory reportedly received a large volume of calls about the Uplift's significance after Karen McNally's disclosure of substantial micro-seismic activity along the San Andreas fault in the Palmdale region in September, 1977. Although McNally repeatedly stated that no prediction was being made on the basis of micro-tremors, clarification attempts focused on whether this phenomenon was a precursor to a quake and what the relationship between the micro-tremors and the coming earthquake in the uplifted area was. Some callers took for granted that a quake had been predicted and wanted clarification of its expected magnitude and the date of its expected occurrence.

As with the Uplift, the Whitcomb announcement originally generated no clarification inquiries to USGS. However, Caltech, Whitcomb's affiliate institution, was inundated for a two-to-three week period by callers attempting

to clarify his "hypothesis test." Since the bulk of incoming calls mentioned Whitcomb's name or referred to the recently-issued "prediction," the Caltech switchboard routed all calls directly to Whitcomb. Whitcomb reportedly received five to ten letters per day during this period, and two of his staff members screened all calls and answered the majority of questions. Two-thirds of these calls were reportedly from the public; the others came from scientific or governmental agencies. Most of these inquiries from the public were based on "misinformation," most callers believing Whitcomb had actually "predicted" a 7.5 (or so) magnitude quake for the San Fernando Valley. In a personal interview, Whitcomb said that most inquiries were the result of misinformation from the press who had sensationalized his hypothesis test by treating it as a prediction.

Just as the McNally announcement refocused attention on the southern California Uplift, a resurgence of interest in Whitcomb's "prediction" occurred at an intersection of several events beginning in late September, 1976. These events were the distribution of an earthquake preparedness pamphlet included in the telephone companies' regular September and October billings, a "rumoring" event which will be discussed in the next section, and extensive media attention to destructive earthquake and earthquake predictions.

USGS' Public Relations office received so many requests for information on Whitcomb's "prediction" during the latter part of 1976 (many included in responses to the phone companies' mailings) that a special card was printed with specific information on his announcement. The USGS enclosure on Whitcomb's prediction stated:

> James Whitcomb of the California Institute of Technology, Pasadena, made a tentative prediction for an earthquake, comparable to the 1971 San Fernando event, to take place between April, 1976, to April, 1977. The State Earthquake Review Board, however, considered the data insufficient to issue an official warning. We have no information on earthquake predictions other than this one.

Two common examples of requests to USGS are as follows:

> I have heard "experts," via TV talk shows, state that the Los Angeles area is due for a very major earthquake before April, 1977. Have you any information as to the substance of the prediction? (Dated October 20, 1976).
>
> Where do you expect the big one to be if there is one? Do you feel that James Whitcomb is correct in his estimations, only you can't document it? What is the predicted date? (Dated November 6, 1976).

These requests illustrate two types of clarification attempts pertaining to "pinning down" a prediction--getting the facts, and seeking an "insider's" knowledge about the real threat behind the prediction.

The first example is a request for further clarification of the specifics of a prediction heard through the media. As confirmed by our questionnaire data pertaining to Whitcomb's announcement, most people who had heard something about this "prediction" knew only that it was issued by a scientist (referred to as an "expert" in this letter) and that the quake would occur before or during April, 1977. The inquirer's intent was to solicit further facts or "substance" about the prediction itself.

The second writer, perhaps a bit better informed than the first, is also asking for clarification on the prediction's specifics; however, this writer is also seeking an expert's assessment of the prediction. He or she wants the scientist's "feelings" about the prediction, even if documenting or substantiating evidence isn't available. By asking for an informal evaluation of the imminence of the earthquake threat, the inquirer may be seeking a "private" communication from an established authority which would give additional personalized information with which to assess the threat and Whitcomb's announcement.

One additional type of information being sought during this period of time in relation to Whitcomb's announcement was the potential impact of the quake on the writer's geographic location. For example, one person asked

whether the quake would harm a house located on the beach; another asked how seriously the quake would be felt in Covina. These inquiries did not require clarification of the prediction itself, but rather of the earthquake's expected consequences.

The prediction of a December 19 or December 20 quake in southern California by self-proclaimed geophysicist Menry Minturn resulted in an immediate increase in calls to several Los Angeles County safety agencies and scientific institutions. This high level of local information seeking was sustained throughout the entire prediction period. Particularly between November 22 and 30, and again on December 13, the Los Angeles City Civil Defense office was contacted by hundreds of callers asking for preparedness materials (to be discussed below) and trying to find out if any special measures were being taken by the government to prepare for the quake. For example, some callers wanted to know whether evacuation planning was being contemplated by government officials, or where post-quake shelters were going to be established. Most of these inquiries were concerned with the agency's readiness to handle a coming quake. For most of these callers, Minturn's prediction of a pre-Christmas quake was taken seriously.

Caltech received between 100 and 500 calls per day throughout this period, particularly during the days immediately following the November 22 Minturn news interview and on December 7 and 20, the two dates of his predicted quakes (see Table 5 for the Public Relations office's tally of calls during December). Almost all inquiries received by either the Public Relations office or the Seismology Laboratory during December pertained to Minturn's prediction, even though the media announced that Whitcomb had discontinued his hypothesis test during this period.

TABLE 5

RECORD OF CALLS TO CALTECH PUBLIC RELATIONS OFFICE REGARDING MINTURN'S PREDICTIONS

Date	Number of Minturn calls
December 3, 1976	7
December 6, 1976	9
December 7, 1976	26 (Day of Minturn's Solomon Islands prediction)
December 9, 1976	15
December 15, 1976	17
December 16, 1976	13
December 17, 1976	16
December 20, 1976	20 (Day of Minturn's prediction for Los Angeles quake)

Several types of inquiries were received by the Public Relations office staff and the researchers in the Seismology Laboratory. The majority of callers wanted to know whether, in fact, an earthquake would occur on December 20; these callers were seeking confirmation of the much-discussed prediction from a credible scientific source. Examples of such calls included:

> A teacher from Palmdale called and said she had a class of hysterical kids who were afraid that the earthquake was going to occur and she wanted to check to see if it was true or not.
>
> Another woman called to see if she should leave town because of the earthquake. Her husband did not believe the prediction, but she did, so she said she was going to leave her husband in Los Angeles if the quake were really going to happen.
>
> A man from Lancaster who owns a gas station called to find out about the quake since the gas company's trucks would not deliver to his station on the 20th because of the coming quake.
>
> A woman caller wanted to find out if there was going to be a quake that weekend. She said she wanted to leave town but would not want to leave her children alone if there was going to be a quake.

However, a large number of callers who had apparently already accepted the prediction as credible were seeking additional information. According to one staff person, many callers seemed frightened and wanted to know what they should do; some asked whether they should leave Los Angeles on the 20. A few asked whether a tidal wave was anticipated because of the December 20 quake. Some rather irate callers asked why Minturn's predictions were so accurate and yet Caltech, with its expensive labs and equipment, still couldn't predict earthquakes.

On December 20, Caltech received inquiries about the "quake" which the callers believed had occurred. As with clarification attempts related to earthquake events discussed above, callers asked, "When did the quake hit," "how large was it?" Some out-of-town callers asked whether it was safe to return yet.

One interesting feature of these clarification attempts which was not found in relation to other prediction or rumoring events was the reluctance to accept disconfirming statements from scientific sources. Repeatedly in interviews with Caltech personnel (and, to some extent, from Civil Defense staff), anger or disbelief from the caller was recounted as a response to the standard disclaimer that Caltech knew of no credible prediction of a December 20 quake. Such callers often remarked angrily that Caltech was withholding information from the public. The two motivations most frequently cited for doing so were quite opposite: some believed that Caltech, rather altruistically, did not want people to panic or try to leave the city in a mass exodus; others (by far the smaller proportion) claimed that since the prediction did not originate at Caltech its staff was unwilling to acknowledge it.

This type of response to a clarification attempt was unexpected. If, as assumed, people contact "expert" sources for additional information with which to select between alternative definitions of an event so as to make behavioral or action choices, such unwillingness to accept the sought after information appears a bit irrational. However, this rejection of expert sources may be the result of three situational factors unique to the Minturn predictions: its timing, coming as it did after two widespread rumoring events; the initial credibility attached to it by the media which made it popularly accepted; and the fact that a specific date on which the quake would occur was cited. These three features may have affected how the informal networks' assessed the prediction's validity, and heightened the callers' dissonance upon receiving disconfirming expert evaluations. If the caller's social circle or informal networks overwhelmingly believed the prediction to be valid, perhaps the caller reduced his or her dissonance by denying the experts' evaluations or by attributing their disconfirmation to various explanatory

motivations.

A more straightforward explanation for this response is simply that callers were not calling to find out whether the prediction was valid. Assuming the prediction to be valid, they were seeking further information and clarification. Nothing is so infuriating to an interrogator as to have the expert refuse to answer the question asked and answer instead a question the interrogator did not ask, and in the process tell the questioner that the next question asked is based on a faulty assumption.

A second survey of librarians was conducted in early 1977 to determine whether Minturn's prediction caused any information-seekers to turn to them for clarification. When asked whether there were any months when requests for information on earthquake-related topics increased noticeably, only six (18.7%) of the responding librarians indicated that such requests had increased. The increase, according to them, came primarily during the months of December, 1976, and January, 1977, possibly indicating that Minturn's prediction did have an impact on increasing interest in earthquake-related topics in general.

Librarians were also asked whether they received earthquake-related requests in December of 1976 from patrons who specifically mentioned Minturn's prediction. Almost 41 percent of the responding libraries indicated that they had received such requests (see Table 6). Specific requests on Minturn or his prediction included questions about his credentials, requests for copies of his prediction, inquiries about the magnitude and expected location of the quake, and requests for the librarians' opinions of whether the quake would actually occur. Other requests for earthquake information made by patrons who cited Minturn's prediction as the reason for their interest included requests for fault maps and evaluations of safe locations to move to, inquiries about whether quakes can actually be predicted, requests for information on other

TABLE 6

REQUESTS FOR INFORMATION ON MINTURN'S PREDICTION FROM LOS ANGELES PUBLIC LIBRARIES

	Frequency	Percent	Cumulative Percent
Yes, several	5	15.6	15.6
Yes, but few	8	25.0	40.6
None	19	59.4	100.0
Total	32*	100.0	

* Of the 61 branches and departments in the Los Angels Public Library system, 32 (52.5%) returned the follow-up questionnaire.

earthquake predictions and on earthquakes in general, and inquiries for any type of earthquake preparedness information.

The media's dissemination of earthquake predictions by seers, psychics, and astrologers frequently caused clarification inquiries directed to scientific experts. Although USGS' earthquake prediction section does not receive many such inquiries, they did receive two letters asking whether there was a quake predicted for 1982, a date popularized by John Gribbin and Stephen Plagemann in their book, The Jupiter Effect (New York: Walker and Co., 1974). The date has become largely dissociated from its source and seems to have become a part of earthquake prediction folklore. In discussions with scientists and government officials in the prediction area, these experts report that they frequently get asked, sometimes in jest and sometimes in earnest, about 1982 and the effects of the unusual planetary alignment which will take place at that time.

A Caltech spokeswoman reported that in March, 1978, the Laboratory received a rash of calls asking whether Caltech had any information about a quake that was going to occur in March. After several such calls, she asked where the callers had heard about such a prediction. Although many seemed embarrassed to admit it, several of the callers said that a psychic had made the prediction. A few callers mentioned the "earthquake lady," Clarissa Bernhart, as the psychic source. Although this forecast was not carried in any major paper in the Los Angeles area, psychic predictors (including Bernhart) are featured on television talk shows (e.g., The Mike Douglas Show and AM Los Angeles) three or four times a year, and earthquakes seem to be included each time in the predictions made by at least one of the show's guests.

The clarification attempts for psychic predictions seem to focus on whether the scientific community has any knowledge of them. Typical questions include, "do you (or Caltech) know anything about it," "do you believe it," "does Caltech have a prediction out now?" Once assured that no credible scientific prediction has been made, many callers state that they "just wanted to make sure" and seem satisfied that no threat is imminent.

Rumoring. Throughout our study period, various rumors of predicted earthquakes have come to our attention. These episodes could not be linked to any specific identifiable earthquake predictions, scientific, psychic, or otherwise. For this reason they are being classified as "rumoring" events to differentiate them from actual prediction-related information seeking. However, the clarification attempts and content of inquiries are similar: in both instances callers are attempting to elicit further information on a prediction that holds a certain amount of ambiguity for them. They differ significantly, however, in that the rumoring episodes are not stimulated by media attention to a prediction event.

The only instance of widespread rumoring occurred in a two-month period, October and November, 1976. This episode (or successive episodes) seemed to begin at the same intersection of events that refocused attention on the Whitcomb announcement, about a month prior to Minturn's first prediction. Public clarification attempts and information-seeking activities seemed to peak twice during this episode: during the third week in October and the third week in November. Each of these rumoring episodes will be discussed separately.

The October rumoring episode seems to have started early in October and peaked between October 19 and 22. Although the predicted magnitude of the rumored quake varied, Caltech was consistently cited as the source of the prediction.

Although information-seeking attempts to clarify this "prediction" do not seem to have begun in large numbers until the 18th or 19th of the month, there are indications that stories of the impending quake had been circulating for two or three weeks by then. During an interview with a USGS scientist about earthquake predictions on October 15, he mentioned that he had recently heard a rumor of an earthquake predicted for the San Fernando Valley, the site of the 1971 quake, from two sources. He had received a call about October 1 from a San Fernando resident who had heard that a huge quake was going to strike her area around October 11. The caller said the source of the prediction was Caltech, but that no official prediction was going to be made because Caltech decided to withhold the information from the general public. The caller wanted verification that a prediction, even though unannounced, had actually been made. While attending a cocktail party, this scientist had been told that the mother of one of the other guests, living in San Fernando, had packed all of their expensive crystal in boxes because a large earthquake was expected to strike the San Fernando Valley sometime around the 15th of October.

By October 19, Caltech's Public Relations office was receiving at least fifty calls per day, and the Seismology Laboratory was receiving upwards of a hundred calls a day. At this time, the source of the "predicted" quake was said to be someone from either the Jet Propulsion Laboratories or Caltech who had predicted an 8.0 earthquake for October 21. In addition, the National Guard was supposedly already on alert for this event.

Most clarification inquiries merely asked whether the prediction were true or not. As with the later Minturn inquiries, some callers were reluctant to accept the disconfirming information and became argumentative, stating that Caltech was just withholding the information.

On October 20, the information-seeking calls increased and the rumor intensified. The 21st was still the date of the predicted quake, but most callers now believed that the magnitude would be 8.5 or 9.0. The National Guard was believed to be evacuating people from the predicted impact area, which some callers identified as the San Fernando Valley and others as the area of the last big quake. Most of these inquiries were attempts to ascertain whether any quake was really predicted.

However, Caltech also started receiving calls on this date from schools and hospitals about information received from an alleged "Caltech scientist." In the last day or two, a man identifying himself as a Caltech scientist had been calling schools and hospitals to warn them to be ready for a large, destructive earthquake to occur around the 21st. He said that the quake prediction wasn't being released because it was feared that many people would panic. This type of anonymous communication to large institutions may have given rise to the intensification of information-seeking inquiries after the 19th.

Also on the 20th, the Seismology Laboratory got several calls from angry parents who wanted to know why their children's school had been closed on the 21st. They referred to the closure as "the trouble your prediction made." One of the Laboratory researchers called the school's principal and explained the situation; the principal responded that he didn't realize the prediction wasn't authentic.

Another call to the Laboratory on the 20th came from a psychiatrist treating a child who was still having problems resulting from the 1971 San Fernando quake. He requested that someone from the Laboratory call the child to reassure him that no earthquake had been predicted for the next day. Because of the prediction rumor, the child reportedly was unwilling to let his mother go to work the next day.

The large volume of inquiries on the predicted October 21 quake prompted Dr. Clarence Allen, representing Caltech's Seismology Laboratory, to issue a statement on October 20 to be read to all Caltech callers as an "official" disclaimer of the rumored prediction. That statement read:

> Dr. Clarence Allen of Caltech says: "No such prediction came out of Caltech or from any other responsible agency that we know about. It appears to be an unfounded rumor. Furthermore, specific predictions of this type are not yet possible.

Not until November 4, however, did any newspaper carry the story of this "false rumor" along with Allen's disclaimer, although each paper that carried the story gave it front page coverage.

During this time, Caltech was not the only organization to receive calls. The Los Angeles Civil Defense office received an unusually large number of calls between October 20 and 22 requesting preparedness information, mainly pamphlets on earthquake preparedness in the home and first aid emergency manuals. Inquiries to public agencies became so numerous at this time that on October 22 Civil Defense activated its Emergency Operations Center, a communications center with inter-agency tie-lines that is usually activated only under disaster or extreme conditions, in order to handle the earthquake prediction rumor inquiries.

The rumor had become "substantiated" by this time with "confirming" evidence being cited by the callers, the majority of whom were not seeking to clarify the prediction any longer but were seeking preparedness information to ready themselves for it. Confirming evidence cited by the callers included reports that ambulance drivers throughout the city had been put on alert, that recent city-wide earthquake exercises by safety and emergency agencies were held to prepare for this already-predicted quake, that well water temperatures had risen recently, that animal life was leaving the Newhall area, and that friends at Caltech had confirmed that a prediction was actually made.

By October 25, all inquiries on this rumoring episode had subsided.

The November rumoring episode seems to have been much smaller in scope than the October incident; no increase in inquiries to Civil Defense or police agencies due to a rumored quake was found, and Caltech received only a few calls.

We first became aware of this "prediction" on November 11, when an earthquake folklorist, aware of our interest in such events, contacted us with the following account:

> A friend who is a beauty parlor receptionist received a call from a Caltech secretary indicating that "She better prepare for an earthquake." The secretary informed the receptionist that there is a prediction of an earthquake to occur in two weeks of 8.2 magnitude.

As in the October rumoring episode, Caltech was cited as the source of the prediction, and the earthquake was to be of magnitude 8 or above. A call to Caltech's Public Relations office, however, revealed that they had not received any inquiries about such a "prediction" at this time.

Around November 15, another acquaintance aware of our interest in earthquake predictions recounted a prediction he had heard that morning. His children's babysitter's brother who works for a Caltech professor told the babysitter that a professor at the Laboratory had predicted an 8.5 or greater earthquake for the Los Angeles area which would occur before the end of the week. However, the professor did not want to release the prediction to the public.

Again, the withholding of a prediction was cited as an important reason for the informal dissemination of the information. Perhaps the relationship between a credible scientific source that is allegedly withholding information on a destructive earthquake and a lack of formal media attention to the rumored event is necessary for widespread circulation of such information through informal channels. In neither of these rumoring episodes did media

attention focus on the "prediction" prior to its date of impact. In both cases, the message remained an unauthenticated rumor which resulted in information-seeking inquiries to expert or authoritative sources.

By November 19, the rumoring episode had intensified and the prediction had become more specific. In interviews conducted by one of the Co-principal Investigators, the 8.0 or greater earthquake predicted by a Caltech scientist was to occur within the next 36 hours or sometime on November 20. On November 19 there was a great deal of discussion at UCLA about whether people would come to work or not the next day, usually accompanied by nervously humorous references to the pre-1934 masonry buildings in which these people worked. On the 20th the rumor was elaborated. It was reported that Caltech (or JPL) staff had been sent home early from their jobs because of the prediction.

A check with Caltech revealed that some inquiries had been received asking whether people had been dismissed early because of an earthquake prediction; however these were few in number. Even on the date of the predicted quake, few clarification attempts had been received.

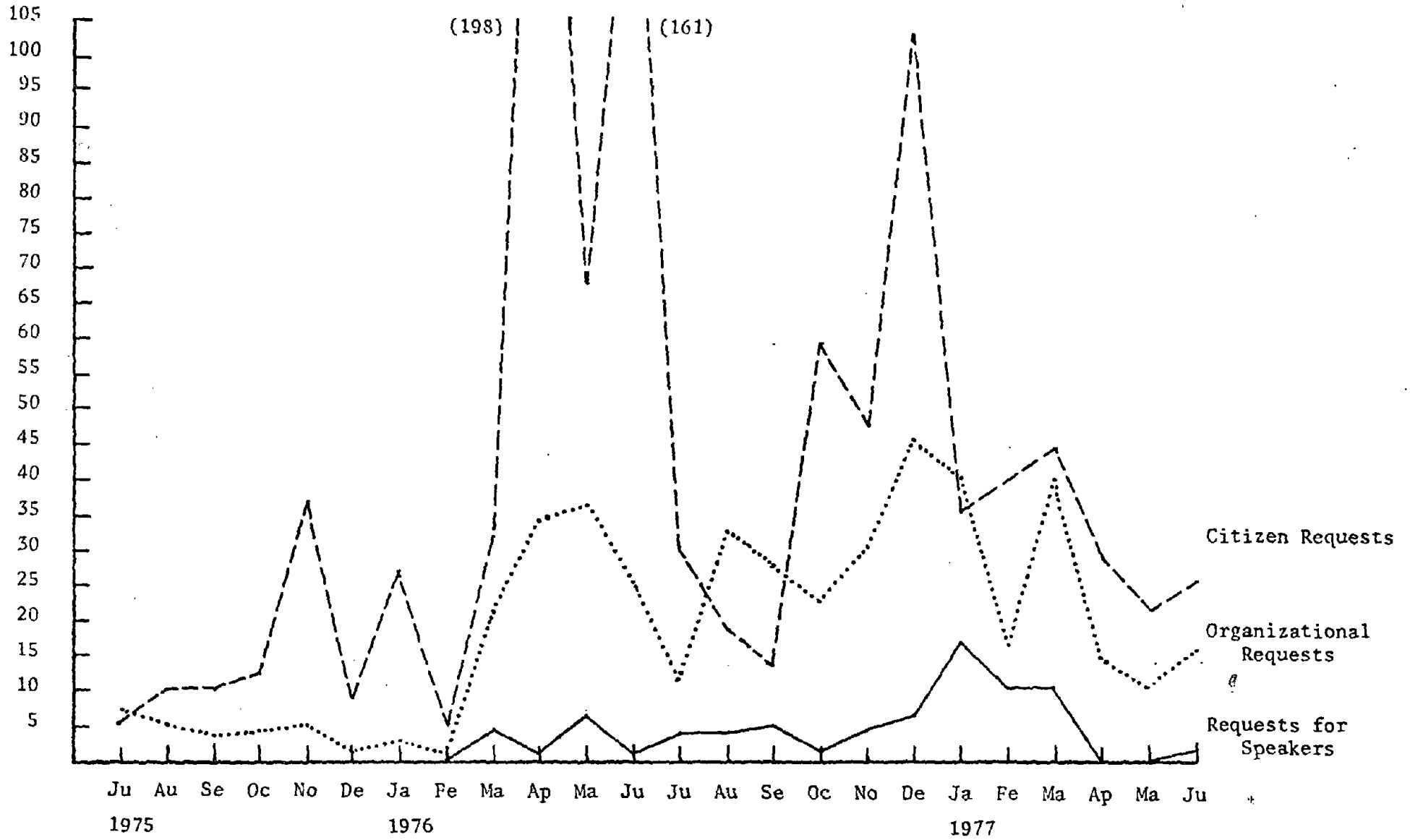
Since most informants on this rumoring episode were related in some manner to UCLA and since information-seeking activity to major information sources was quite light, it is difficult to determine the extensiveness of the networks that carried this rumoring episode. However, on November 25 the Los Angeles Times carried a front page story debunking rumors of an impending great earthquake which had circulated "for the past several weeks." Don Anderson, director of the Seismology Laboratory, and Peter Ward and Jerry Eaton of USGS were all quoted as saying they knew of no valid earthquake predictions issued by reputable scientists for the southern California area. This disclaimer, although it followed Minturn's prediction by a couple of days, was essentially directed toward the November rumoring episode, which may indicate that its impact upon the scientific community was widely felt.

Preparedness Inquiries

In this section, information-seeking will be divided between two types of inquiries: phoned or written requests for information on earthquake preparedness from individuals and similar requests from groups.

Almost all local requests for earthquake preparedness information were directed to the Civil Defense office. Frequently, other agencies, such as fire and police departments, refer callers with specific earthquake or disaster preparedness inquiries to the Civil Defense office since that office has free information and pamphlets available.

Figure 2 breaks down the number of requests received by the Civil Defense office between July, 1975, and June, 1977, into two categories. (Unfortunately, comparable data were not available after June, 1977.) The first category of inquiries consists of requests from individuals for general information. Although earthquake planning became a major concern of this office in 1976 and 1977, during the second half of 1975 many of the information requests dealt with other Civil Defense functions, such as why the air raid alarm is sounding, where the nearest fallout shelter is, and whether any general emergency preparedness materials are available. From July, 1975, to March, 1976, some fluctuation in the these requests occurred. However, not until April--the time of Whitcomb's prediction--did a significant jump in information seeking occur. The requests in April alone accounted for almost one third of all requests received in 1976. According to Civil Defense staff members, the bulk of these inquiries was concerned with Whitcomb's "prediction"--what was being done by the city to prepare for it, and what individuals could do.



INDIVIDUAL AND ORGANIZATIONAL REQUESTS FOR EARTHQUAKE PREPAREDNESS INFORMATION

FIGURE 2

The second type of inquiry came from organizations. In late 1975 there were very few inquiries being made to the Civil Defense office on any topic from formal organizations. (We are talking about informational requests here, not requests for speakers. Requests for speakers will be dealt with in the following chapters.)

During February, 1976, requests received by the Civil Defense office for information on earthquake preparedness from both individuals and organizations were fewer than they had been at any time during the preceding eight months. Obviously, the Uplift did not capture community attention at this time.

In March, information-seeking activities started to increase, although citizen inquiries were not unusually high in comparison to earlier levels of requests. Organizational requests for information, however, showed a dramatic increase over earlier months.

It was during the month of April that information-seeking activities of both organizations and citizens reached their highest levels to that point. Requests from citizens were especially high, increasing dramatically over the the average number of inquiries during the preceding eight months. This increase in community interest and concern about earthquake preparedness corresponded with the increase in information-seeking attempts being made to Caltech concerning the Whitcomb "prediction."

In May, while individual requests for information were declining slightly, organizational requests peaked, reaching the second highest number of requests during the entire monitored period. In June, organizational requests declined and in July reached their lowest level since the announcement of the Uplift. In contrast to this decline, individual requests rose sharply in June, attaining the second highest number of requests. According to Civil Defense sources, several of these inquiries for information mentioned

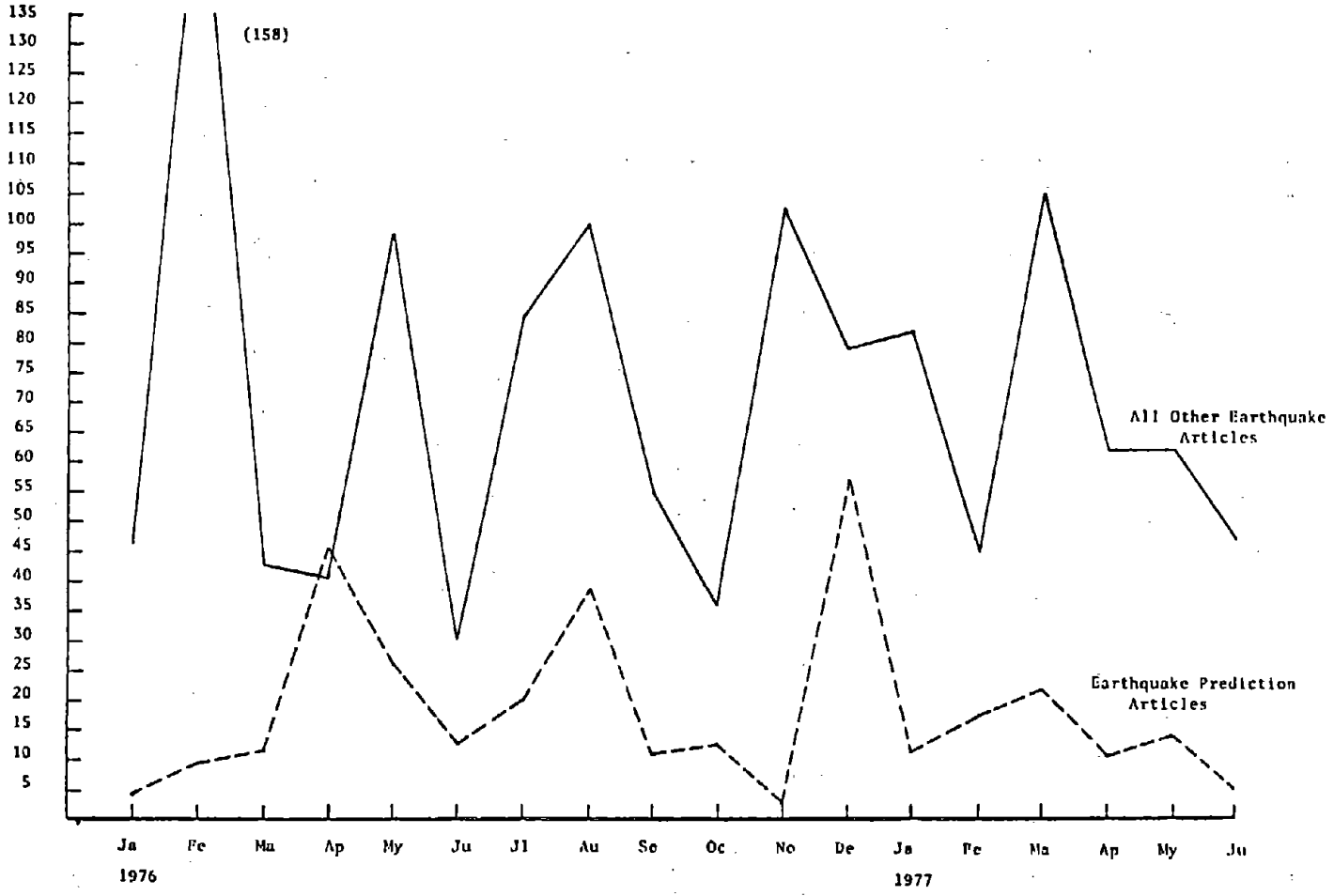
the Italian earthquakes as the motivation for wanting to be prepared (see Part Two). In July, August, and September, requests from individuals plummeted to pre-Whitcomb levels. In August, however, organization requests for information rose again.

To summarize the first half of 1976, individual inquiries regarding earthquake preparedness peaked in the late spring and then continued to decline throughout the summer. Organizational interests in attaining preparedness materials were more mercurial, with interests peaking in mid-spring and late summer and slumping dramatically in mid-summer.

As was noted above, the October rumoring episode resulted in a substantial number of inquiries from individuals for both preparedness and prediction information from the Civil Defense office. Although the November rumoring episode may not have been as well documented, it clearly resulted in a continued high number of requests for preparedness information from the general public.

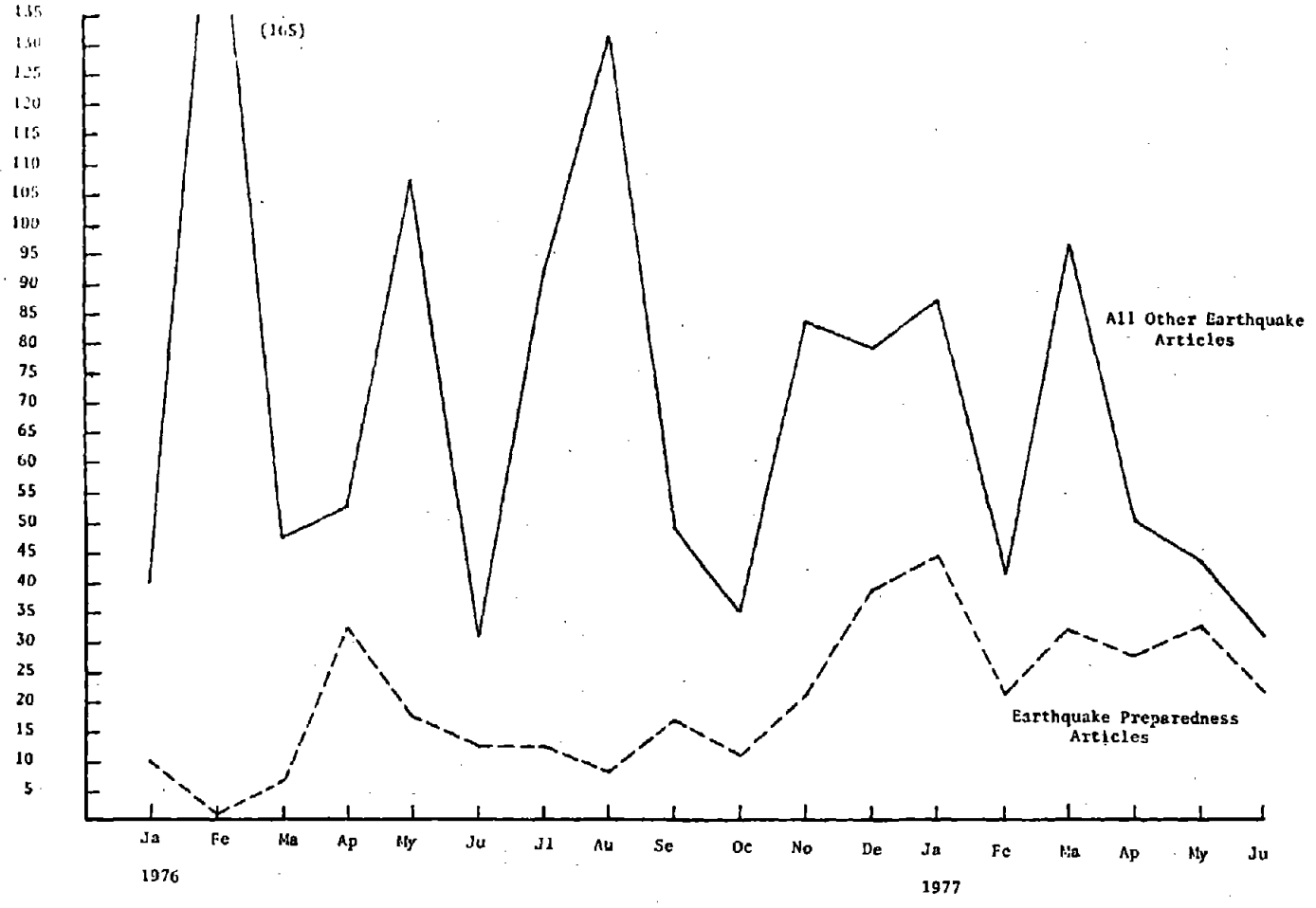
In December, as the Minturn prediction was given extensive media coverage, the increase of requests to scientific institutions was paralleled by more requests for preparedness information. Both citizen and organizational requests for preparatory information peaked in December, organizational requests achieving their highest level at any time during the monitored period and requests from citizens their highest level since spring.

The beginning of 1977 was characterized by a shift in the media's focus from specific earthquake predictions to a general concern with earthquake preparedness (Figure 3). Similarly, both individual and organizational levels began to fall from their "peaks" in December, but held at fairly high levels until March. By March, both media attention and community concern about earthquake threat (Figure 3) and preparedness (Figure 4) began to decline.



DISTRIBUTION OF NEWSPAPER ARTICLES BY MONTH: PREDICTION ARTICLES COMPARED TO ALL OTHER EARTHQUAKE ARTICLES

FIGURE 3



DISTRIBUTION OF NEWSPAPER ARTICLES BY MONTH: PREPAREDNESS ARTICLES COMPARED TO ALL OTHER EARTHQUAKE ARTICLES

FIGURE 4

Summary

As we have seen, information seeking is not an automatic response to the announcement of a prediction. If it were, we should have found three "peaks" of requests--in February, April, and December, 1976. Instead, we found that preparedness was a principal information-seeking concern between April and June, and the need for scientific clarification and evaluation were primary interests in October, November and December. The April to June episode resulted from the cumulative attention of the media given to both the Uplift and Whitcomb announcements. The October to December episode occurred because of widespread rumors of an imminent great quake followed be a well-publicized prediction of a local quake by a "suspect" scientist.

Although these information-seeking attempts may overload expert and resource organizations at certain times, they should not be diagnosed as symptoms of a "panicky" public. Rather, these activities should be seen as attempts by members of the community to inform themselves about potentially dangerous events and about protective measures which can be taken if a prediction is found to be credible.

CHAPTER TWO

A METHODOLOGICAL OVERVIEW OF GROUP RESPONSE

It is important to know how groups--both formal organizations and interest-oriented associations, established groups and emergent collectivities--are responding to earthquake threat in southern California. Although our survey of individual knowledge, attitudes, and actions is important, an understanding of why groups direct their attention toward earthquake topics may have direct relevance for community decision-making and resource allocation policies. What conditions mobilize group interest in earthquake topics? What types of resources do these groups use to satisfy their members' informational needs? Into what channels do these groups funnel their activities? What types of policy issues or decision-making concerns do these groups have? When do groups become active around an earthquake issue? These are some of the questions we will investigate in this part of the report.

The unit of analysis in this part of our analysis will be the "group". A group is being defined as "an informal collectivity or a formal organization which has held a meeting or discussion on an earthquake-related topic at any time during our study period." For our purposes, groups will be identified solely on their ability to draw people together, however temporarily, around an earthquake-related topic or concern.

Only "civilian" community groups were included in the analysis. Several groups responsible for the general safety and welfare of Los Angeles residents (e.g., the Sheriff's department, local police stations, Red Cross chapters, official emergency preparedness agencies) held organizational meetings in order to improve their ability to respond to an earthquake-created emergency

situation, legally fulfilling their institutional role obligations. Such organizational meetings were not included in this study. This phase of the study is concerned primarily with the actions taken by collectivities that are not institutionally required to attend to earthquake topics and concerns.

The process of drawing a sample of attending groups and collectivities proceeded in two stages. First, groups were located through four different sources and preliminary information was gathered on the earthquake presentations. Second, the meeting organizer (or a knowledgeable informant) was contacted for an in-depth interview concerning the group's interest in the subject.

The sample upon which this analysis is based contains the maximum number of groups for which sufficient information was available (N = 135). Because of the several sources used to gather this sample, some groups were located through two different sources, indicating that adequate search procedures were being employed to find as many sponsoring groups as possible located throughout the county. Although the sample was not randomly drawn, is is believed to reflect adequately the patterns and processes which were important in sensitizing groups to earthquake-related topics and in determining the extent to which different types of groups were mobilized. Because of the non-random sampling techniques used and the small numbers of cases in some categories, statistical measures of significance will not be used in the analysis. However, whenever applicable, descriptive data have been included to substantiate the conclusions which have been drawn.

Because the overwhelming majority of group meetings took place prior to our August, 1977, survey, we confined this analysis of group response to the eighteen months between January 1, 1976 and June 30, 1977. This period coincides nicely with the period of most active community concern about earth-

quake predictions. No new groups in Los Angeles County emerged after this date, and the number of group meetings held were very few in number. None of our resource agencies reported more than a handful of requests after this date.

The Identification of Attending Groups

In order to identify the groups that had held a meeting or presentation on an earthquake subject (i.e., on some earthquake-related topic), lists were compiled from three primary sources.

Randomly-sampled Los Angeles County residents. Between January, 1977 and November-December, 1978, five surveys, using randomly sampled Los Angeles County residents, were conducted to determine how people were responding to the threat of a major earthquake striking southern California in the near future. In each of the five waves of this study, one of the questions that the respondents were asked was:

> Within the last year have you heard any lectures, speakers, or special presentations about earthquakes, earthquake predictions or earthquake preparedness at club meetings, school programs, church groups, work groups, neighborhood or block meetings, or anywhere else?

If the respondent answered affirmatively to any part of this question, a follow-up question was asked to identify the group more specifically.

Data from two waves of the county-wide survey were used: the initial face-to-face survey conducted during January-March, 1977, covering any group meetings held during 1976; and the first set of phone interviews conducted during July-August, 1977, covering meetings held between June, 1976 and July, 1977. The first set of interviews were conducted with 1726 respondents, the second with 977.

Respondents who indicated during either of these interviews that a group meeting had been attended were then contacted by phone for additional

information about the meeting and about the group which sponsored it. These respondents were considered "preliminary" informants for interviewing purposes. Depending on how extensive the respondent's knowledge about the meeting or the group was, more knowledgeable informants were also sought in some instances. The purpose of these follow-up interviews with survey respondents was to identify the person or persons who planned for or organized the meeting to discover why this type of meeting was held at a particular time. A copy of the interview schedule used to elicit this information is included in the Appendix to Part Eight.

Resource organizations. Organizations within the Los Angeles area which furnish speakers on earthquake topics were contacted, and lists of groups for whom presentations were given were compiled. These organizations included two emergency preparedness agencies (the Civil Defense and the Red Cross), a local prominent earthquake research institution (Caltech), and a group that offers earthquake preparedness programs for a fee (Creative Home Economics Consultants). These four organizations represent the only groups that routinely provided speakers on earthquake topics to community groups on request. These organizations, then, constitute the major resources for speakers throughout the county to unofficial, information-seeking groups.

Media references. Since January, 1976, six prominant newspapers have been monitored on a daily basis for earthquake-related articles (see Part Two). Also, television and radio news programs were randomly monitored for pertinent items. If any meetings or programs were advertised or discussed by any of these media sources, attempts were made to contact informants from the sponsoring groups to identify the meetings' organizers.

In order to identify as many of these groups as possible, snowball sampling techniques were also used. Attempts were made to follow-up any

references by previously identified informants (or from any other source) about groups that had held similar meetings. Frequently, informants or organizers had knowledge of other group meetings which preceded or followed the one they attended. When sufficient information was available, organizers of these informant-identified meetings were also interviewed. Although this technique did not result in a large number of additions to the sample, it provided additional confidence that the three primary sampling sources were not overlooking any major categories of meeting activities.

Table 1 presents the number of groups identified through each of these sources.

Interviews with Meeting Organizers

In-depth interviews were then conducted with all meeting organizers who could be located. Occasionally, however, the identified organizer fulfilled merely the perfunctory obligation of setting up the meeting or program and had no knowledge about the actual meeting. In those cases, additional interviews were conducted with "knowledgeable informants," people identified by the organizer as "knowing what went on" or who had been present at the meeting.

The emphasis in these interviews was placed on discovering why the topic of earthquakes had become salient for the sample group. Why were earthquakes deemed important enough to be given time in an already-existing group or organization, or why did the topic of earthquakes bring new groups or previously existing informal groups together at least long enough to hold a meeting. The follow-up interview had four major components: (1) To discover why a meeting was held at a particular time, especially in relation to significant prediction or other relevant events; (2) to estimate the responsiveness

TABLE 1

SOURCE OF INFORMATION ABOUT EARTHQUAKE PRESENTATIONS TO GROUPS

Source	Number	Percent
Questionnaire	63	46.7
Civil Defense	50	37.0
Informant	9	6.7
Media	7	5.2
Creative Home Economics Consultants	4	3.0
Caltech	2	1.4
Total	135	100.0

to earthquake matters on the basis of attendance, taking into account the type of sponsoring group relative to dramatic events; (3) to determine whether the focus of the meeting was on preparedness measures and action strategies oriented toward individual and family units, or toward actions that could be undertaken by citizens' groups for the larger community; (4) to determine whether the meetings or the groups that are newly formed around earthquake concerns continued after the initial program or meeting. The theoretical relevance of these components and the orienting issues which they address will be discussed in Chapter Five.

A copy of this interview schedule is included in Appendix B to Part Eight. Using this schedule as a guide, a fluid interviewing style was adopted in order to elicit information in the organizer's own frame of reference on the meeting. Since the study was exploratory, it was assumed that relevant dimensions of the groups' orientations toward earthquake topics would be discovered using such an approach.

Coding Interviews

All interviews were initially categorized according to the source through which the group was identifed and the institutional type of the group.

A codebook was created (Appendix C), initially using the organizer's interview schedule as a guide. A sample of widely differing types of meetings was then examined to determine whether any additional dimensions or group characteristics appeared to be salient for discriminating between the groups. This process of examination and comparison was repeated several times throughout the coding process, resulting in the addition of several news coding categories. As a result of this constant comparative method, suggested by Glaser and Strauss (1967), analytic categories for classifying the attending groups

were discovered.

Emergent Groups

Because of the special attention given to the newly emergent groups during the study period, case studies were compiled on the seven "new" groups and on two issues and their publics which arose during this period. These case studies include information on the history of the new collectivity, the collectivity's leaders and constituents, the complexity of organization and formalization, the goals, and the strategies employed to achieve those goals. To collect this information, extensive field interviews were conducted not only with the leaders of these groups but with all (or several) of the participants in them. Brief case studies will be presented in Chapter Five.

REFERENCE

Glaser, Barney G. and Anselm L. Strauss, 1967. The Discovery of Grounded Theory: Strategies for Qualitative Research. Chicago: Aldine Publishing Company.

CHAPTER THREE

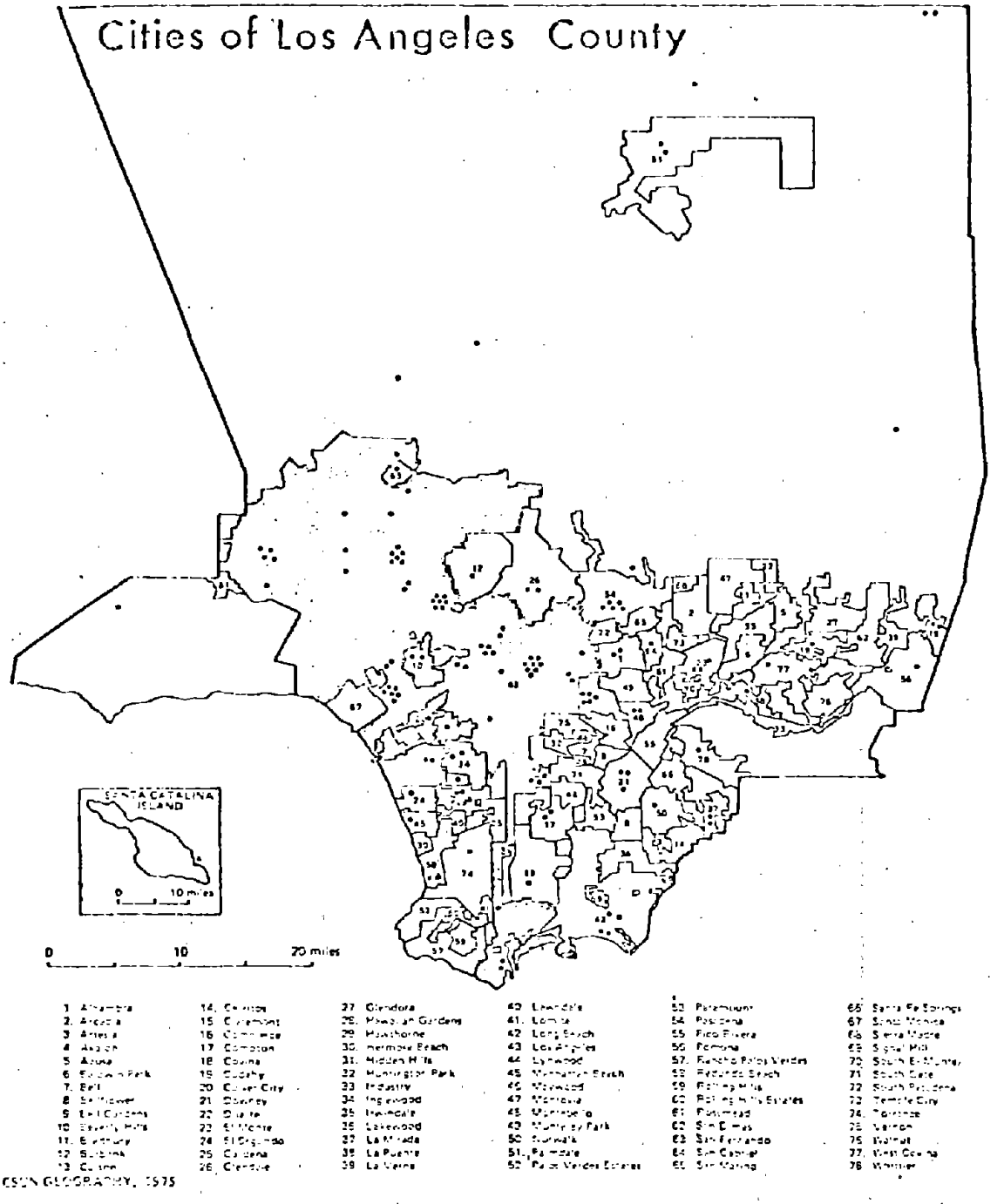
DESCRIPTION OF ATTENDING GROUPS

This section will provide a general background on the groups that held earthquake meetings during the 18 month study period. The major purpose of this section will be descriptive, not analytical. It is hoped that through this description, the reader will derive a "flavor" for the variety of attending groups and the types of responses they directed toward earthquake concerns, making the analysis in Chapter Three more meaningful.

Using the sampling methods described above, we identified 135 groups as having sponsored some sort of meeting or program relating to earthquake topics. Figure 1 indicates where those meetings took place in Los Angeles County.

By using the ethnic distributions within communities, based on the 1450 randomly sampled respondents in the Los Angeles County basic field survey, we estimated that almost 87 percent of the meetings occurred in predominantly Anglo communities (Table 1). The relative number of meetings occurring in predominantly Black and Mexican-American communities, with 19 percent and 15 percent of the sample population, respectively, was much less. Assuming that these meetings drew from the sponsoring community, members of ethnic minorities were less likely than White Anglos to be exposed to earthquake topics from this potential source of information.

Table 2 breaks the sponsoring groups down into types of groups, a classification which will be used throughout this section for comparison purposes. Work-related meetings were by far the most numerous occasions



LOCATION OF EARTHQUAKE MEETINGS HELD IN LOS ANGELES COUNTY: JANUARY 1, 1976 TO JUNE 30, 1977

FIGURE 1

TABLE 1

DISTIRUBITION OF EARTHQUAKE MEETINGS BY DOMINANT ETHNIC COMPOSITION OF COMMUNITY IN WIHCH MEETING WAS HELD

Ethnic composition of community	Number of meetings	Percent of total meetings
Anglo	92	86.8
Black	20	18.9
Mexican American	16	15.1

[1]The total percentage is greater than 100% because 106 meetings took place in 55 different communities, 5 of which had more than one dominant ethnic group.

TABLE 2

GROUPS WHICH HELD FORMAL MEETINGS ON EARTHQUAKE TOPICS
BETWEEN JANUARY 1, 1976-JUNE 30, 1977

Type of group	Number	Percent
Occupational, Professional	57[1]	42.2
Civic, Social, Service	29	21.5
Schools	20	14.8
Community, Open Meetings	13	9.7
Churches	8	5.9
Neighborhood, Residential	8	5.9
Total	135	100.0

[1]Meetings which took place at schools but which were for the faculty only (That is; for employees of the school district) were included in the occupational category.

through which earthquake information was disseminated. Social, civic, or service clubs and schools were also popular sponsors of earthquake meetings. From this table, it appears that the more formally structured collectivities, having stable and routinized memberships, were more likely to sponsor earthquake meetings than were the less well-defined collectivities whose membership boundaries were more fluid. But frequently, meetings within one type of group led to meetings in other group categories. The types of groups will be compared according to audience characteristics, concern with predictions, content of meetings, and duration of involvement.

Audience Characteristics

Table 3 indicates that college students and senior citizens were the adult age groups for whom fewest special earthquake presentations were made. For the senior citizens, all presentations were sponsored by government-subsidized programs oriented toward the nutritional needs of older people. In each case, the earthquake speaker made his presentation during the noontime meal served by the center.

The children who had special earthquake presentations made for them were either members of youth-oriented service organizations, such as scouting programs, or were students in private, parochial schools. Presentations were given only in Baptist, Lutheran, Catholic, and Jewish elementary schools. The only earthquake presentations made in public schools and reported by our adult respondents were given to handicapped students in two special schools.

Table 4 indicates that males and females were equally exposed to these presentations.

Attendance at the meetings was largely voluntary (Table 5), perhaps indicating that those who attended were selectively exposing themselves to

TABLE 3

AGE OF EARTHQUAKE MEETING PARTICIPANTS

Age	Number	Percent
Senior citizens	9	6.7
Adults	96	71.1
College students	5	3.7
Children	10	7.4
Mixed	15	11.1
Total	135	100.0

TABLE 4

SEX OF EARTHQUAKE MEETING ATTENDEES

Sex	Number	Percent
Exclusively female	14	10.3
Exclusively male	16	11.9
Mixed group	105	77.8
Total	135	100.0

TABLE 5

TYPE OF ATTENDANCE FOR EARTHQUAKE PRESENTATIONS

Type of attendance	Number	Percent
Voluntary	84	62.2
Mandatory	47	34.8
Unknown	4	3.0
Total	135	100.0

earthquake information. Table 6 indicates that occupational and professional groups were more likely to require their members' attendance at earthquake presentations than were other groups, perhaps reflecting their legal responsibility for distributing safety information to employees. (This point will be elaborated on in Chapter Five: occupational groups were the most likely groups to sponsor meetings because of their legal responsibilities to do so.) All other types of sponsoring groups overwhelmingly had voluntary attendance.

Table 7 shows that the audience size at the majority of meetings was under 90. A substantial number (almost 23 percent) of these presentations, however, was also made to audiences of 200 or more. Perhaps because occupational groups were more likely to be required to attend these meetings, they had the highest percentage (36 percent) of these 200 or more member audiences (Table 8). The "drawing power" of clubs and community meetings was concentrated in the 16-90 person audiences. Schools seem to have drawn two types of audiences: relatively small, representing mainly PTA meetings which were almost always very small; and quite large audiences, representing the large numbers of students for whom programs were presented. Residential and neighborhood groups, one of the least frequent types of groups, also drew the smallest audiences.

In order to determine how audiences were attracted to these meetings through group-sponsored channels, a maximum of three advertising sources were coded for each group. Table 9 shows which groups preferred various types of media for announcing their programs and presentations.

Occupational or professional groups were the most likely groups to have used no sources of advertising for their meetings. This reflects the mandatory nature of employees' attendance at safety meetings and other regular in-service training sesssions. That earthquake safety was the topic under

TABLE 6

TYPE OF ATTENDANCE ACCORDING TO CATEGORIES OF GROUPS: ROW PERCENTAGES

Type of group	Type of attendance	
	Voluntary	Mandatory
Occupational, Professional	18.9	81.1
Civic, Social, Service	96.6	3.4
Schools	85.0	15.0
Community, Open meetings	100.0	0.0
Churches	100.0	0.0
Neighborhood, Residential	100.0	0.0

TABLE 7

NUMBER OF PEOPLE ATTENDING EARTHQUAKE PRESENTATIONS

Number attending	Number	Percent	Adjusted percent
15 or less	19	14.1	16.7
16-45	36	26.7	31.5
46-90	19	14.1	16.7
91-199	14	10.4	12.3
200 or more	26	19.2	22.8
Unknown	21	15.5	--
Total	135	100.0	100.0

TABLE 8

AUDIENCE SIZE BY TYPE OF SPONSORING GROUP

Audience size	Occupational	Club	School	Community	Church	Residential
Less than 15	20.0	13.6	0.0	18.2	0.0	50.0
16-45	18.0	50.0	53.0	36.3	33.3	12.5
46-90	16.0	22.7	0.0	27.3	33.3	12.5
91-199	10.0	4.6	23.5	0.0	33.3	25.0
More than 200	36.0	9.1	23.5	18.2	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total number	50	22	17	11	6	8

TABLE 9

TYPE OF ADVERTISING SOURCE USED BY TYPE OF GROUP SPONSORING EARTHQUAKE MEETING: ROW PERCENTAGES

Type of group	Advertising sources					
	Newsletter bulletins	Newspaper	Radio	Television	Verbal	None used
Occupational, Professional	30.5	0.0	0.0	0.0	27.1	42.4
Civic, Service, Social	42.9	3.6	3.6	0.0	21.4	28.5
Schools	60.0	12.0	4.0	0.0	0.0	24.0
Community, Open Meetings	51.7	37.9	0.0	3.5	6.9	0.0
Churches	62.5	0.0	0.0	0.0	37.5	0.0
Neighborhood, Residential	50.0	8.3	0.0	0.0	41.7	0.0

discussion at these meetings was unimportant in attracting an audience. Churches, because of their weekly habit of distributing bulletins of upcoming church events, and schools, because of their daily use of bulletins to distribute information to teachers and students, were the most frequent users of bulletins. Meetings held in neighborhoods or residential complexes followed a pattern similar to that of churches. However, their bulletins were usually notices posted in obvious locations in the residential area.

Open community meetings, clubs, and schools made the widest use of different advertising media to attract audiences. With only one exception, these groups were the only users of newspapers, radio, and television to advertise their meetings. Clubs used these sources to a lesser degree, however, since many of their meetings were open only to members. Open community meetings relied heavily on newspaper advertising, often using two or three community papers in the immediate vicinity of the meeting's locale.

Table 10 gives an indication of the extensiveness of advertising attempts by type of group. Clubs were the least likely groups to use any type of announcements about forthcoming earthquake presentations. Most occupational or professional organizations relied exclusively on the in-house office bulletin. None of the categories of groups (including churches) with more clearly defined memberships used three types of advertising media. Groups that sponsored "open" meetings and really had to "attract" an audience used a variety of announcements. Most of these meetings were sponsored by local colleges, libraries, or (less frequently) cities. Programs were announced in local papers in the immediate area, on posters, and through mailing lists.

TABLE 10

TYPE OF GROUP SPONSORING AN EARTHQUAKE MEETING BY THE NUMBER OF SOURCES USED TO ADVERTISE THE MEETING

Group type	Number of advertisements used			
	None	One	Two	Three
Occupational, Professional	18.2	55.4	14.8	0.0
Civic, Social, Service Clubs	54.5	19.6	18.5	0.0
Schools	9.1	14.1	22.2	0.0
Community, Open meetings	0.0	1.1	29.7	80.0
Churches	18.2	4.3	7.4	0.0
Neighborhood, Residential	0.0	5.5	7.4	20.0
Total	100.0	100.0	100.0	100.0
Total number	11	92	27	5

Concern with Predictions

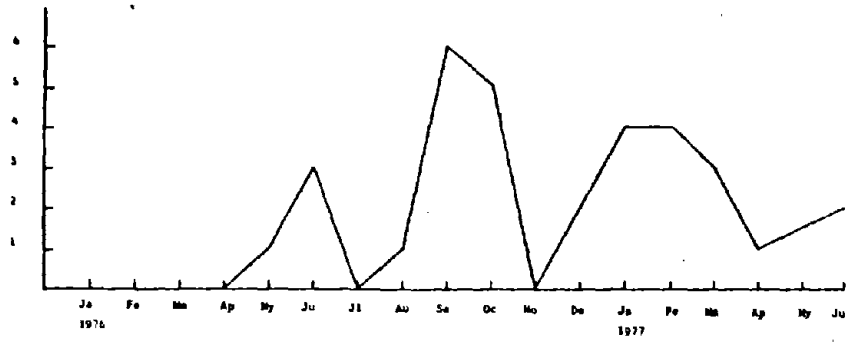
To what extent were earthquake predictions topical matters for discussion in these meetings? Do these meeting occurrences coincide with prediction announcements? With major earthquakes in the world? Do they coincide with the media's treatment of these events?

Since meetings have been described according to type of sponsoring group, Figure 2 presents the distribution of meetings by month for each type of group.

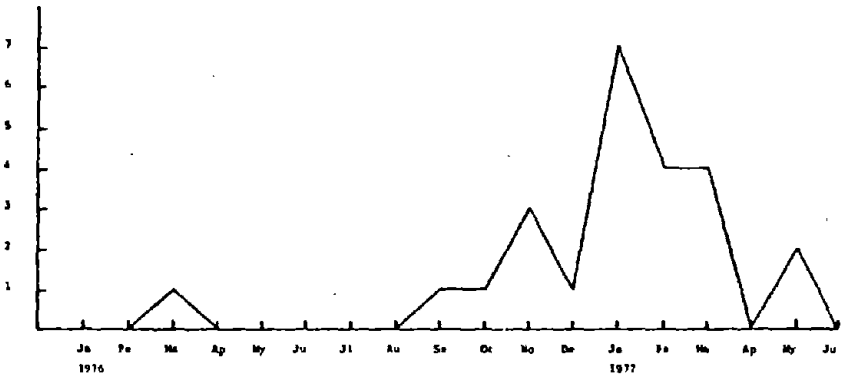
Organizational groups display a peaking of meetings in September and October, a pattern which is not evident in any of the social climate indicators. Like other group types, work groups show strong increases between January and March, 1977.

Social, service, or civic clubs only start to display an interest in earthquake topics in November. This interest promptly falls off in December (the holiday season), then peaks in January and remains high until April, 1977. Had the Christmas holidays not occurred, these groups could ostensibly have maintained a high plateau of interest from November through March. The peaking of initial interest in November coincides with both the rumoring episodes and the first of the Minturn announcements.

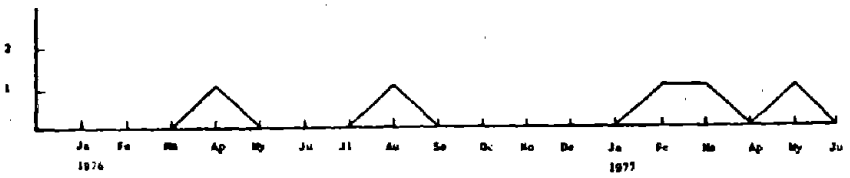
The social, service, and civic clubs are special interest groups, and include senior citizens' centers, scouting programs, CB clubs, community improvement organizations, armed service units, and business-oriented social clubs. It is possible that groups of this kind required a good deal of time to see how a topical concern such as earthquake threat and safety could be incorporated into their on-going programs or to fulfill other group needs. Since many of these groups relied on the "entertainment value" of their programs to keep their members' attendance high, it was often important to schedule topical and interesting speakers. This was true especially when



(A) OCCUPATIONAL OR PROFESSIONAL GROUPS



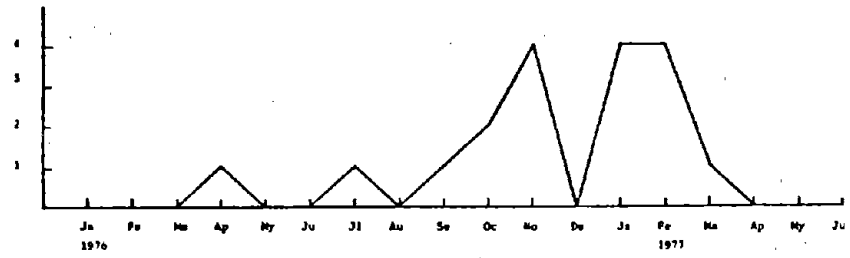
(B) SOCIAL, CIVIC, SERVICE GROUPS



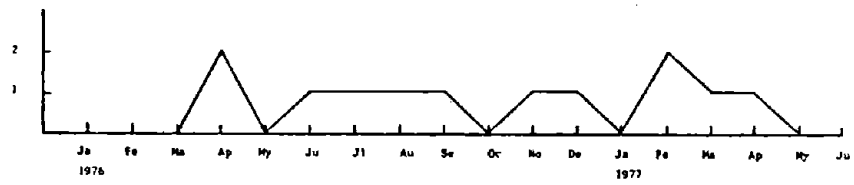
(C) CHURCH GROUPS

MONTHLY DISTRIBUTIONS OF ALL MEETINGS BY CATEGORICAL TYPE

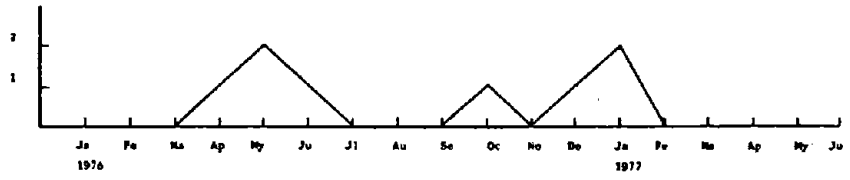
FIGURE 2



(D) SCHOOL GROUPS



(E) OPEN COMMUNITY MEETINGS



(F) RESIDENTIAL OR NEIGHBORHOOD GROUPS

FIGURE 2 (CONTINUED)

group meetings routinely featured "guest speakers". The need to fill this time slot with someone interesting was a frequently cited reason why a club had sponsored an earthquake speaker.

Service clubs were also constantly searching for ways to render "service" to their communities and to give their members a purpose. Most of these groups were attracted to the topic of earthquakes because of the emergency response problems such as traffic control, setting up evacuation shelters, search and rescue, maintaining communication systems, that destructive earthquakes create. These problems fit in a variety of ways with the groups' raison d'etre. For example, two CB groups, both of which claimed close working relationships with law enforcement agencies, held meetings to determine how they could aid police by making themselves and their radios available to set up emergency communication links following a major earthquake. One of these groups was also heavily involved in community improvement projects, one of which was to make neighbors more responsible for each other's safety and welfare by being aware of any "unusual" persons or activities in the neighborhood by being alert to possible burglaries, muggings, ets. Because of its wide distribution of chapters throughout the Los Angeles area, this group anticipated forming "anti-looting" patrols if communities in which they had chapters were struck by a large quake. Veterans' groups and scouting programs were also making plans, under the direction of the Civil Defense office, to aid quake victims by providing temporary or long-term shelters, collecting shelter supplies, learning first aid, etc. For these groups, then, the heightening of general interest in the possibility of a future earthquake provided a problem for their members to work on, providing meaningful activity for the group.

Earthquake meetings sponsored by churches occurred only sporadically during the study period, and their numbers were really too small to draw any

patterns from. However, two features of churches seemed to be particularly important in sponsoring earthquake-related meetings. First, the Mormon church, with its strong belief in any type of emergency preparedness, was especially visible as a sponsor of earthquake meetings. Second, churches with sizeable minority memberships were also important sponsors of earthquake preparedness meetings. Two essentially Black Baptist churches and a Seventh Day Adventist church with a large Mexican-American congregation held special preparedness programs. The Adventist program included a Spanish translator and printed information in both English and Spanish.

The occurrence of school-related earthquake meetings closely approximated the pattern of clubs. Partly this similarity was due to the inclusion of PTA meetings in this category. PTAs, like clubs, are special interest groups. Most PTA meetings during the study period focused on the schools' preparedness plans in the event that an earthquake occurred during the school day. These meetings were basically to inform parents of already-existing plans, not to include them in plan preparation, with the exception of school districts in the Palmdale area which are discussed in Chapter Four. As rumoring and informal discussion of the earthquake threat increased in October and November, the attention of parents may have been reflected in concern for their children's safety.

But the effects of situational contingencies on group response should not be overlooked. Again, the effects of the holidays are seen in the school pattern. A complete cessation of classes for two weeks limited the opportunity for school-related meetings to take place; but the immediate return in January to pre-Christmas levels reflects the importance of other external contingencies to which organizations also respond.

Both open community and residential or neighborhood meetings followed

a similar pattern during the study period. Both were among the earliest groups to sponsor earthquake meetings in April; but both also had the lowest occurrence rates. Although community meetings continued until April, 1977, residential meetings did not occur after January, 1977. These residential groups included neighbors getting together for formal meetings, college dormatory groups, and condominium owners' associations.

From these different patterns, it does not appear that there were any particular events which led to an immediate increase in the number of sponsored meetings. However, it is important to determine whether near predictions as diffused notions of a coming quake actually accounted for the occurrence of these meetings. Table 11 indicates that almost 36 percent of the known groups reportedly held meetings because of a concern about earthquake predictions. Figure 3 indicates where these meetings occurred. Of the groups sponsoring meetings specifically because of earthquake prediction concerns, occupational groups and schools were the most likely to have done so (Table 12). However, since the categories of groups are of unequal size, Table 12 also indicates that once category size is controlled, the percentage of occupational meetings motivated by prediction concerns is no higher than for clubs or churches. Conversely, more than one-third of all community, residential, and school meetings were motivated particularly because of earthquake predictions, even though the temporal occurrences of these meetings did not necessarily reflect their prediction concerns.

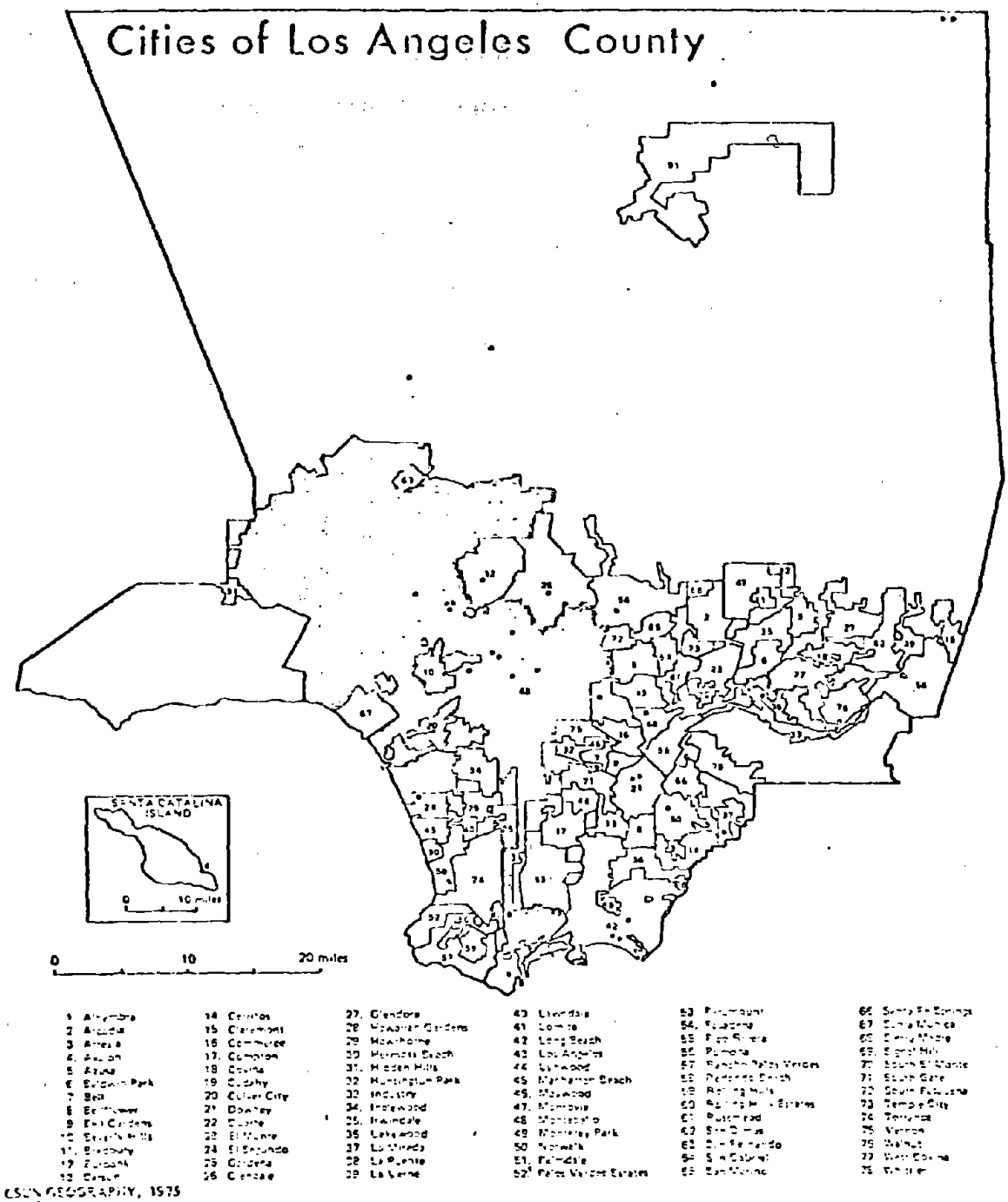
Content of Group Meetings

Earthquake preparedness was by far the most frequent topic of discussion and presentation at these meetings (Table 13). In only 10 percent of the meetings were scientific matters or predictions exclusively discussed. Mostly

TABLE 11

GROUPS FOR WHICH PREDICTIONS WERE SPECIFICALLY MENTIONED AS MOTIVATIONS FOR HAVING THE MEETING

Motivation for meeting	Number	Percent	Adjusted percent
Predictions as motivation	31	23.0	36.9
Predictions not important	53	39.3	63.1
Unknown	51	37.7	--
Total	135	100.0	100.0



LOCATION OF EARTHQUAKE MEETINGS THAT WERE HELD
BECAUSE OF PREDICTION CONCERNS

FIGURE 3

TABLE 12

MEETINGS MOTIVATED BY EARTHQUAKE PREDICTION CONCERNS
BY TYPE OF SPONSORING GROUP

Type of group	Percent of prediction motivated groups across categories	Percent of Prediction motivated groups within each category
Occupational, Professional	32.3	17.5
Civic, Social, Service	16.1	17.2
Schools	22.6	35.0
Community, Open meetings	16.1	38.5
Churches	3.2	12.5
Neighborhood, Residential	9.7	37.5
Total	100.0	

TABLE 13

TYPE OF EARTHQUAKE INFORMATION PRESENTED AT GROUP MEETING

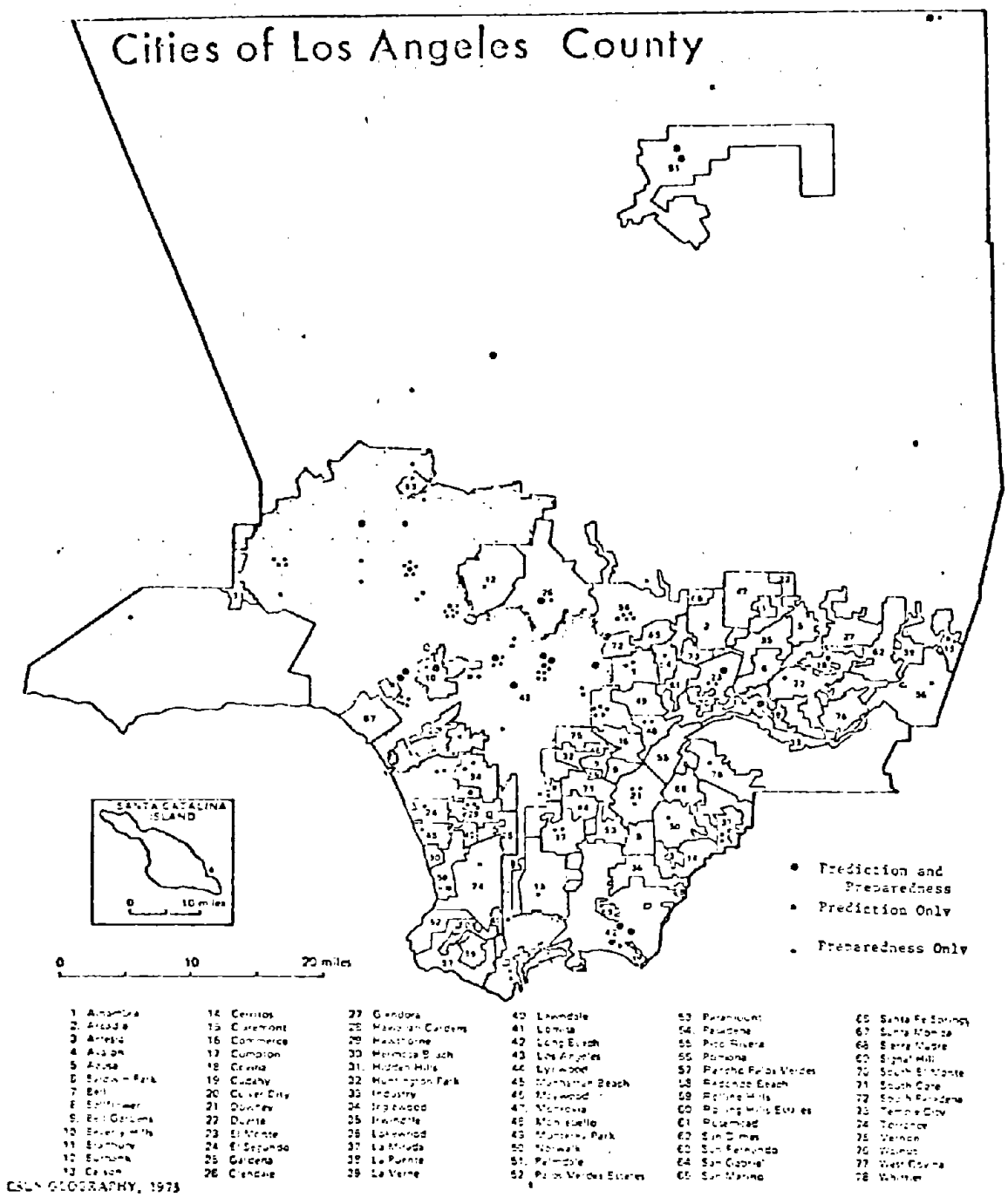
Type of information	Number	Percent	Adjusted Percent
Preparedness	99	73.3	74.5
Scientific and/or Prediction	14	10.4	10.5
Both	20	14.8	15.0
Unknown	2	1.5	--
Total	135	100.0	100.0

these meetings were concentrated in clubs or occupational groups that were scientifically oriented (e.g., engineering clubs) or where people were working in the field of seismic safety (e.g., TRW). In a few instances, these exclusively scientific meetings were open to the public, being sponsored through Caltech or Cal Poly's lecture series.

In an additional 15 percent of the meetings, scientific information was combined with preparedness information. Usually this resulted from having more than one speaker at a meeting, one talking on the physical aspects of earthquakes and the other on preparedness, or from presenting a film on earthquakes in combination with a preparedness speaker.

Figure 4 indicates where these types of meetings occurred. When the location of the scientific meetings was analyzed according to the ethnic compositions of the sponsoring community, Black communities were the least likely to have had scientific information presented to them (Table 14). When Table 14 is compared with Table 1 (i.e., with the total number of all meetings by ethnic make-up of the sponsoring communities), it is obvious that both Black communities especially and Mexican-American communities were less likely to have scientific information available to them through group meetings. White Anglos, on the other hand, showed a slight increase in the proportion of scientific meetings to which they were exposed over their baseline proportion of all meetings.

The general tendency to hold meetings that emphasized preparedness paralleled the overwhelming concern with seeking out information on preparedness by individuals. Although the attention of the media to earthquake prediction motivated some group meetings and even though predictions were discussed to some extent in over 40 percent of the meetings, the primary importance of the prediction concerns was to sensitize people and groups to the need for



LOCATION OF EARTHQUAKE MEETINGS ACCORDING TO THE TYPE OF INFORMATION PRESENTED

FIGURE 4

TABLE 14

DISTRIBUTION OF SCIENTIFIC OR EARTHQUAKE PREDICTION MEETINGS BY DOMINANT ETHNIC COMPOSITION OF COMMUNITY IN WHICH MEETING WAS HELD

Ethnic composition of community	Number of meetings	Percent of total meetings[1]
Anglo	24	88.9
Black	2	7.4
Mexican American	3	11.1

[1] This equals more than 100% because there was more than one dominant ethnic group in some of the 27 communities in this sample.

more adequate preparedness information and planning.

The group's purpose for having an earthquake meeting was collapsed into three general categories, namely, providing members with information, providing the organization with information which could be used to update its earthquake planning or to improve its training for an earthquake event, and exploiting earthquake concerns to be used strategically for other group purposes. Using this simplified classification, meetings held to provide information for members were most likely to correspond in times of occurrence to prediction events (Table 15 and Figure 5). When meetings were held to provide members with information, those meetings first occurred in April (along with the Whitcomb and Uplift stories), in November (at the rumoring peak), and in January (following the overall December holiday slump). The occurrence of meetings for organizational purposes is discussed fully in Chapter Four.

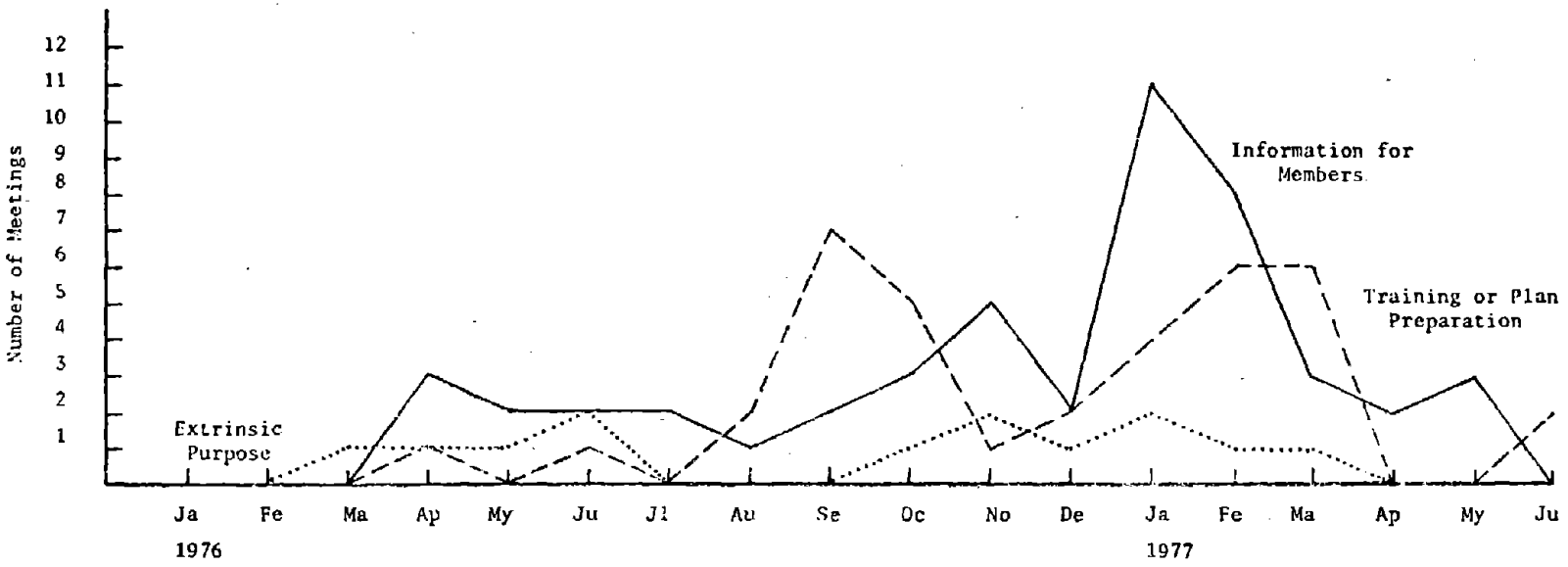
It should not be assumed that all groups were concerned with earthquakes per se as their reason for sponsoring an earthquake-related meeting. In fourteen of the groups investigated, an earthquake meeting was held because of the strategic use leaders felt could be made of an earthquake topic. For example, earthquake meetings were sponsored to fulfill a sociology class requirement, to fulfill badge requirements in disaster preparedness for a girl scout troop, and to provide supplemental information to engineers working in the areas of seismic design. The most frequent strategic purpose, however, in sponsoring an earthquake meeting was to revitalize a sagging group membership. For example, one meeting was organized by two neighbors who wanted to revitalize a Neighborhood Watch program in Arleta. One of their chief concerns in revitalizing this group was to increase pride in the neighborhood and reduce the incidence of juvenile delinquency, a widespread and growing

TABLE 15

COLLAPSED CATEGORICAL PURPOSE FOR EARTHQUAKE INFORMATION USED BY GROUP

Categorical purposes	Number	Percent
Members' information	57	42.9
Training and planning	62	46.6
Strategic use of earthquake topics for other purposes	14	10.5
Total	133[1]	100.0

[1]Two cases had missing information on this variable.



MONTHLY DISTRIBUTION OF MEETINGS BY PURPOSE

FIGURE 5

TABLE 16

PROPORTION OF GROUPS WHOSE PURPOSES FOR HAVING AN EARTHQUAKE MEETING WERE NOT RELATED TO EARTHQUAKE MATTERS (N=14)

Group category	Proportion with non-earthquake purposes
Occupational, Professional	.035
Civic, social, service	.207
Schools	.100
Community, Open meetings	.154
Churches	.125
Neighborhood, residential	.125

problem in the community. They had been trying for some time to get neighbors interested in such a meeting but had not had any success. Then in April and May, 1976, when "Everyone was talking about earthquakes again," they decided to have a meeting on earthquake preparedness. Since the 1971 quake which had caused a great deal of minor damage in their neighborhood, the organizers felt that this renewed interest in earthquakes would motivate their neighbors to come to the meeting. Although the meeting was moderately successful, having brought together fifteen people from their block, the attendance again dropped at the next "regular" Neighborhood Watch meeting.

Table 16 indicates the proportion of groups within each category that held earthquake meetings for such strategic purposes. Clubs were the most frequent groups to exploit earthquake concerns for non-earthquake related group purposes, while occupational groups were least likely to do so.

Most groups brought outside "experts" in to serve as speakers at their meetings (Table 17). Of those external experts, Civil Defense employees were by far the most frequently sought out speakers, addressing almost three-fourths of the groups that used non-members as speakers (Table 18). This finding is especially important in determining the demand being placed on community resources by groups that displayed aroused earthquake interests. This demand, being placed on already overworked agencies, resulted because of resource scarcity, that is, due to a lack of available earthquake speakers for civilian groups.

TABLE 17

SOURCE OF SPEAKERS USED FOR EARTHQUAKE PRESENTATION

Source of speaker	Number	Percent	Adjusted percent
Member as speaker	45	33.3	37.5
Non-member as speaker	63	46.7	52.5
Both	12	8.9	10.0
Missing	15	11.1	--
Total	135	100.0	100.0

TABLE 18

TYPE OF SPEAKERS USED FOR EARTHQUAKE PRESENTATIONS

Type of speaker	Number	Percent of[1] total speakers	Percent of[2] total groups
Civil Defense	55	58.5	73.3
Scientist	9	9.6	12.0
Law enforcement officer	7	7.4	9.3
Fire fighter	6	6.4	8.0
CHEC	5	5.3	6.7
Engineer or architect	4	4.3	5.3
Other	8	8.5	10.7
Total	94[1]	100.0	

[1]This total reflects multiple responses

[2]Base=75; Those groups who had speakers who were not members of the group

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CHAPTER FOUR

THE DURATION OF GROUP INVOLVEMENT

One of the important features of a group's attention toward earthquake matters is the duration of that group's interest; that is, how long the group's interest in earthquake matters was sustained. Duration of involvement could take on three values: singular (a once-only meeting), temporary (interest covering a few weeks or months), or continuing (interest lasting for several months). Table 1 indicates that the large majority of groups (83 percent) had only a singular interest in earthquake topics. According to Table 2, the one-time-only meeting most frequently occurred in neighborhoods or residential complexes (100 percent), school groups (95 percent), and occupational or professional groups (almost 88 percent). Churches were by far the groups which had the highest percentage of continuing groups (37.5 percent), all of which were affiliated with the Mormon church. Both clubs and open community meetings also had high percentages of groups with a longer involvement. Many of these groups were groups that either emerged specifically because of an earthquake-related concern or added a new unit concerned with earthquake matters to an already-existing group.

Figure 1 summarizes the occurrence of the meetings with differing durations of interest. Both the singular and continuing interest groups arose early in the period. Continuing groups seemed to arise following earthquake prediction events in April, August (following the Chinese prediction stories), and December. However, as will be seen below, some of these continuing groups were responding to other environmental stimuli. Groups

TABLE 1

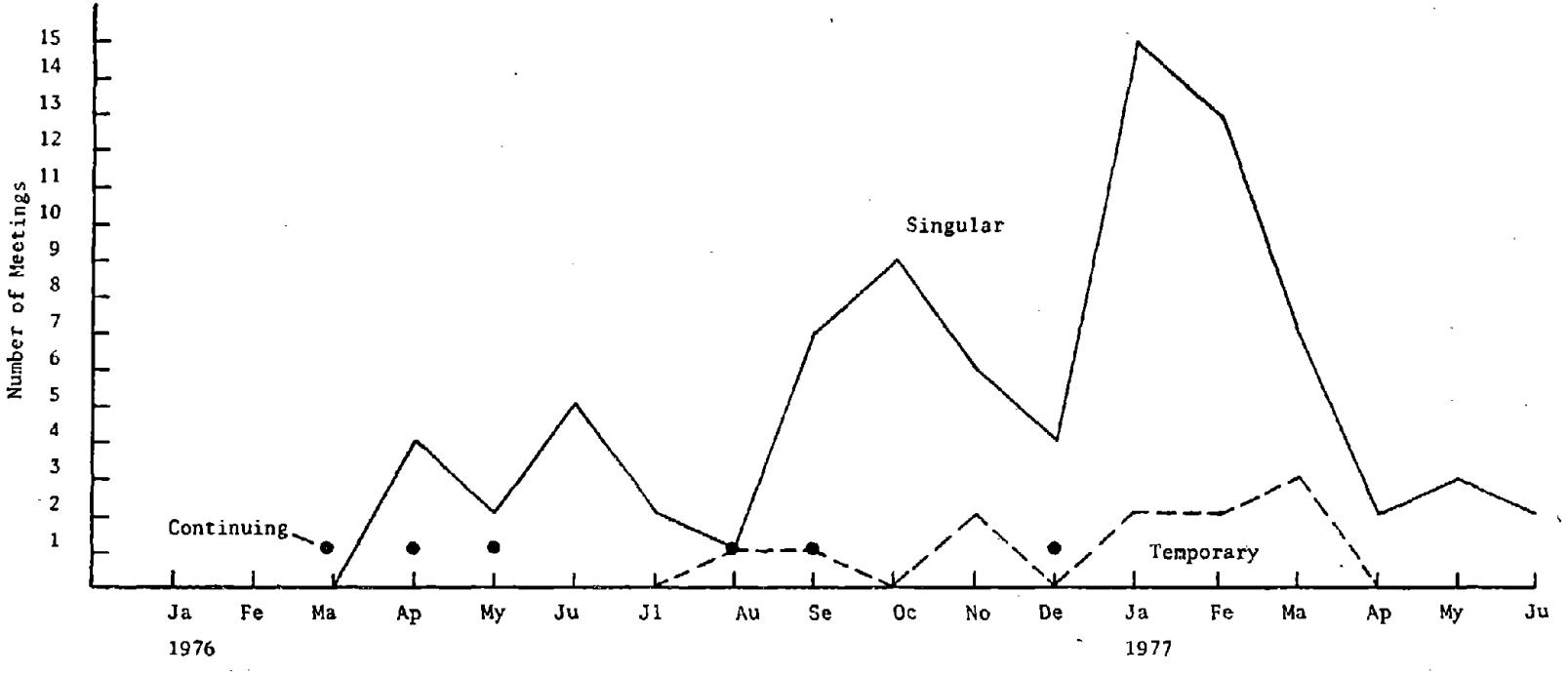
DURATION OF GROUP INVOLVEMENT WITH EARTHQUAKE CONCERNS

Duration of involvement	Number	Percent
Singular	112	83.0
Temporary	13	9.6
Continuing	10	7.4
Total	135	100.0

TABLE 2

DURATION OF ORGANIZATIONS' INVOLVEMENT IN EARTHQUAKE MATTERS
BY CATEORICAL TYPE OF GROUP: ROW PERCENTAGES

Type of group	Duration of involvement			Total percent
	Singular	Temporary	Continuing	
Occupational, Professional	87.7	8.8	3.5	100.0
Civic, Social, Service	71.4	17.9	10.7	100.0
Schools	95.0	5.0	0.0	100.0
Community, Open meetings	61.5	23.1	15.4	100.0
Churches	62.5	0.0	37.5	100.0
Neighborhood, Residential	100.0	0.0	0.0	100.0



MONTHLY DISTRIBUTION OF MEETINGS BY THE DURATION OF GROUP INVOLVEMENT IN AN EARTHQUAKE TOPIC

FIGURE 1

displaying a temporary involvement did not begin to appear until August, 1976, quite a few months after the initial interest in earthquake topics began.

Table 3 shows that temporary groups were slightly more likely than singular groups to add a new unit to handle earthquake-related problems. No continuing groups, however, added new units. These groups either had sufficient structures or procedures under which earthquake matters could be subsumed, or the groups were emergent, their major purpose involving some sort of earthquake concern.

Figure 2 indicates when these new units were added to the already-existing groups. As with groups that had a temporary involvement in the earthquake topics, those that added a new unit occurred later in the study period. With only one exception, they were all added during or after January, 1977. This could indicate that the rumoring of a destructive magnitude quake and the furor over Minturn's prediction were influential events in sensitizing some groups to the need to expand their organizational structure to include earthquake concerns. Of these groups, a new unit was added to a homeowner's association, two to service clubs (one a scouting group and one a Jewish service organization), and three to school groups. (The two occupational groups were both meetings held for school faculty members.)

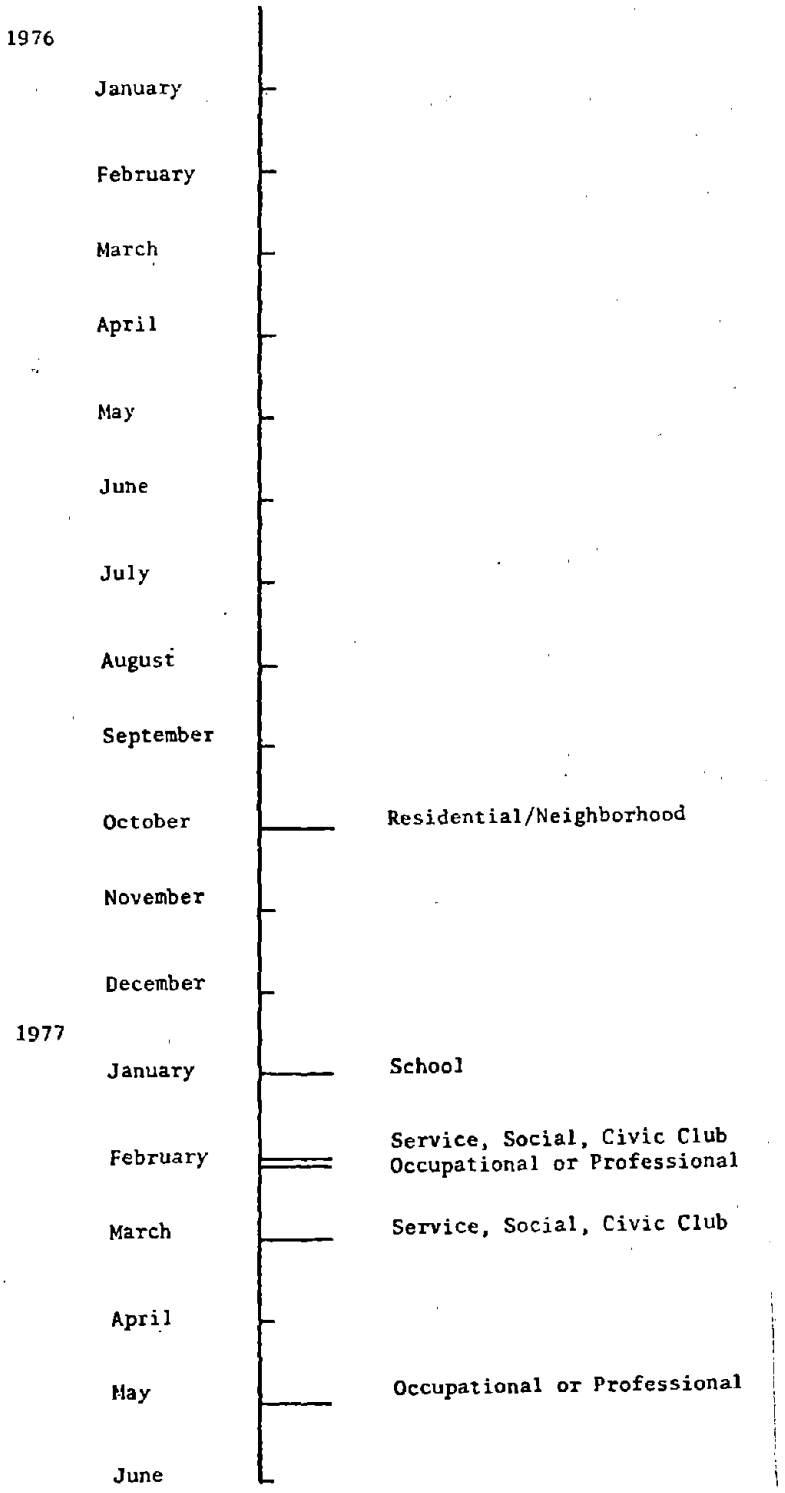
Is there any relationship between duration of a group's involvement in an earthquake-related topic and having an earthquake "expert" in the group? An expert, in the sense being used here, is similar to Paz' (1979) concept of the "lay expert." Lay experts are not necessarily authorities in terms of formal training or scientific expertise, nor do they necessarily hold an organizational position which confers the status of earthquake expert on them. More frequently, these were people who, for a variety of reasons, had more

TABLE 3

DURATION OF ORGANIZATIONS' INVOLVEMENT IN EARTHQUAKE MATTERS
BY ADDITION OF A NEW UNIT WITHIN THE ORGANIZATION
COLUMN PERCENTAGES

Duration of involvement	Addition of a new unit	
	Yes	No
Singular	42.9	83.4
Temporary	57.1	8.3
Continuing	0.0	8.3
Total	100.0	100.0
Total number	7	120

[1]Total N=127; 7 new groups are not included in this tabulation and information is missing for one case.



MONTHLY DISTRIBUTION: GROUPS THAT ADDED A NEW UNIT BY CATEGORICAL TYPE

FIGURE 2

TABLE 4

DURATION OF ORGANIZATIONS INVOLVEMENT IN EARTHQUAKE MATTERS BY PRESENCE OF EARTHQUAKE "EXPERT" IN THE GROUP: ROW PERCENTS

Duration of involvement	Earthquake "expert" in group			Total number
	Yes	No	Total	
Singular	21.9	78.1	100.0	110
Temporary	28.6	71.4	100.0	14
Continuing	70.0	30.0	100.0	10

[1]Information missing on one case.

information on earthquakes available to them. For instance, one school faculty meeting was held because of the increased interest and concern among the teachers about problems created by earthquakes. One teacher on this faculty whose husband reportedly was a seismologist was always talking about earthquake predictions and kept the faculty informed about "what was going on." In other groups, nurses who had special disaster training, teachers who had majored in the physical sciences, or people who had directly experienced the 1971 San Fernando quake became "lay experts" and, as such, were not only sources of information for other group members but were often the catalysts behind group meetings.

Table 4 illustrates the relationship between having a lay expert in a group and the duration of a group's involvement. The longer the involvement, the more likely a group was to have a lay expert. Although this difference is slight between the singular and temporary groups, its impact is great for the continuing groups.

When prediction concerns provided the motivation for the meeting, however, a slightly different pattern was discovered. Although continuing group meetings were slightly more likely than singular groups to have been held because of prediction concerns, temporary groups were by far the least likely to have resulted in this way (Table 5). This finding was somewhat surprising given that so many singular meetings were held to fulfill organizational needs of the sponsoring group (see Chapter Five). But when the extent of prediction discussion during the meeting is considered, the continuing groups are clearly differentiated from the other two categories of groups (Table 6). Although temporary group meetings may not have been motivated by prediction concerns as were the singular groups, predictions were certainly discussed as often during the temporary group meetings (and to a strikingly

TABLE 5

DURATION OF ORGANIZATIONS' INVOLVEMENT IN EARTHQUAKE MATTERS BY PREDICTION MENTIONED AS THE MOTIVATION FOR THE MEETING: ROW PERCENTAGES

Duration of involvement	Prediction mentioned as motivation for meeting		Total	Total number
	Yes	No		
Singular	45.3	54.7	100.0	53
Temporary	28.6	71.4	100.0	7
Continuing	57.1	42.9	100.0	7

TABLE 6

DURATION OF ORGANIZATIONS' INVOLVEMENT IN EARTHQUAKE MATTERS BY THE EXTENT OF PREDICTION DESCUSSION DURING THE MEETING: ROW PERCENTAGES

Duration of involvement	Extent of prediction discussed during meeting			Total	Total Number
	Great deal	Some	None		
Singular	17.8	40.5	41.7	100.0	84
Temporary	20.0	40.0	40.0	100.0	10
Continuing	50.0	50.0	0.0	100.0	8

TABLE 7

EXTENT OF PREDICTION DISCUSSION DURING EARTHQUAKE PRESENTATION BY THE SPONSORING GROUP TYPE: COLUMN PERCENTAGES

Extent of discussion	Occupational, professional	Civic, social service	Schools	Community, open meetings	Churches	Residential, neighborhood
A great deal	18.6	33.3	11.8	38.5	0.0	14.3
Some	25.6	46.7	52.9	53.8	42.9	71.4
None	55.8	20.0	35.3	7.7	57.1	14.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total number	43	15	17	13	7	7

similar degree). All continuing groups showed some interest in prediction topics, half of them engaging in extensive discussions. For the continuing groups, this was probably due to the fact that all of the emergent, continuing groups existed specifically because of earthquake-related interests.

When prediction discussion is broken down by group type (Table 7), occupational or professional groups and churches were the most frequent groups not engaging in such discussions; neither did a third of the school groups raise the subject of predictions. Although predictions received some attention in a large proportion of neighborhood or residential meetings, clubs and open community meetings were the most likely groups to direct a great deal of attention toward predictions.

REFERENCE

Paz, Denise Heller. 1980. "Information Processing Under Uncertainty: Mass Media and Interpersonal Communication Effects on Response to Near Predictions of Earthquakes," Ph.D. dissertation, University of California, Los Angeles.

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CHAPTER FIVE

REASONS FOR GROUP INVOLVEMENT

The data presented in Chapters Three and Four indicate that only a handful (relative to the enormous number available) of Los Angeles County's formal collectivities were sufficiently interested in earthquake matters to hold some kind of meeting on an earthquake-related topic. Their audiences varied in size from less than 15 to more than 400. Some presentations were made simply by another group member (often a supervisor or safety committee member) and lasted less than an hour. Other meetings had several "experts," either in the scientific or preparedness field, who made formal presentations lasting throughout the day, often with the accompaniment of films. Still other groups conducted several meetings, sustaining an interest in earthquake topics over several months.

The question addressed in this chapter is <u>why</u> an earthquake topic became salient for some of these collectivities. Why was an earthquake concern deemed important enough to be given time in an already-existing group or why did it bring new groups or previously existing informal groups together at least long enough to hold a meeting? Since one of the study's major research problems is to understand the variability of collective attention (i.e., the extent to which groups were mobilized), our problem becomes one of identifying the different patterns of association between organizational features, members, and the social climate which, acting in concert, resulted in different types of group responses to earthquake topics and concerns.

Chapters Five and Six will address this problem. In Chapter Five, the concern about the continuance of collective involvement in earthquake topics will be investigated. What situational, structural, and organizational factors were influential in mobilizing continuing collective interest? How is this extended type of involvement related to the emergency of new collective phenomena and to the development of issues? Chapter Six will discuss the problem of "fitting" group meetings to events in the social climate. The concept of "organizational lag" will be introduced in order to account for this poor fit and to explain how it functioned to maintain the "normalcy bias" of collectivities.

Extensiveness of Group Involvement in Earthquake-Related Matters

This section presents a method of analyzing collective action orientations, that is, the extent to which a group's interests in earthquake-related topics have been aroused. These collective action orientations are distributed along two dimensions: (1) the duration of groups' concerns with earthquake matters (discussed in Chapter Four) and (2) the impact of those concerns on the attending group's structure.

The structural impact of earthquake concerns is defined as the changes which occurred in the sponsoring group's structure due to its attention to earthquake topics. Three categories of structural impact were identified: emergence (a new group was formed because of earthquake concerns), expansion (a new unit was created or new duties were assigned to members within an already-existing group regarding earthquake matters), and stability (no noticeable organizational changes occurred because of the group's attention to earthquake matters).

Even though a relatively small number of groups responded to earthquake topics and concerns, there was no great impact made on the groups themselves. As Table 1 shows, almost 90 percent of the responding groups were not concerned enough with earthquake matters to produce any organizational changes. The number of groups coming into existence because of earthquake concerns was equal to the number that underwent some type of organizational change.

Duration of concern (as presented in Chapter Four) has been operationalized by defining group attentiveness as continuing (the group's interests and actions extended over several months), temporary (extending only over a few weeks), and singular (indicating that only one meeting was conducted by the group).

In Chapter Four we learned that groups overwhelmingly incorporated earthquake topics on an extremely fleeting basis. Almost 82 percent of all attending groups had only one meeting or program on earthquake-related topics during the study period. Only about one out of every five attending groups exhibited any kind of sustained interest in earthquakes.

Using these two dimensions, the variation in collective postures toward earthquake concerns and topics can be explored. But neither dimension separately gives an accurate portrayal of the attending groups' action postures. For this reason, a typology has been constructed from these dimensions which more accurately portrays the impact of earthquake matters on groups and organizations.

Figure 1 presents the nine possible variations in group extent of involvement in earthquake matters. Only seven types of involvement, however, were reflected in actual practice by the sample groups. The stability-singular type of involvement was the most common, constituting almost 80 percent of all group action orientations. All other cells in the involve-

TABLE 1

NUMBER OF ALREADY-EXISTING GROUPS THAT ADDED A NEW UNIT TO DEAL WITH EARTHQUAKE MATTERS AND NUMBER OF "NEW" GROUPS WHICH HELD MEETINGS

Structural impact	Number	Percent
Emergence	7	5.2
Expansion	7	5.2
Stability	121	89.6
Total	135	100.0

STRUCTURAL IMPACT

DURATION OF INVOLVEMENT	Stability	Expansion	Emergence	
Singular	A (N = 107)	B Public service organizations Residential group (N = 3)	C Neighborhood meetings (N = 2)	(112)
Temporary	D Service clubs Care facilities Information centers (N = 9)	E Palmdale schools Adult class Explorer scouts (N = 4)	F	(13)
Continuing	G Mormon groups Service clubs (N = 5)	H	I Entrepreneurial groups Grass roots group (N = 5)	(10)
	(121)	(7)	(7)	

TYPOLOGY OF GROUP INVOLVEMENT IN EARTHQUAKE CONCERNS

FIGURE 1

ment matrix have very few cases distributed among them.

The purpose of this phase of the analysis will be to compare these more innovative or durable group responses to the stability-singular modal response. What features of these groups led to their great involvement? Particularly, what forces produced the emergent-continuing response, creating new formal collectivities and motivating their continued existence?

The Source of Motivation for Involvement

One very important variable for explaining this variation in group involvement is the principal motivating reason why the meeting was held. Upon initial contact with the meeting organizer, the interviewer asked: "Why was this kind of meeting held at this particular time?" The organizer was then probed more fully on his or her response.

As Table 2 indicates, these responses fell into three general categories. First, the concerns being expressed by members about earthquake matters were cited by about 20 percent of the organizers. Members' concerns usually referred to fear, anxiety, or worry expressed by group members over the possibility of a coming earthquake, usually with reference to the widespread discussion of such an event. Organizers claimed responsibility for scheduling earthquake-related meetings in about one-third of the groups. Despite continued probing, organizers stated that they were concerned or (more commonly) that they "just thought it would be a good topic."

In the majority of cases, however, it was not group members or leaders, but organizational needs which were the motivational sources for most of the attending groups. In almost equal numbers, meetings were held because the group was legally required to have some sort of disaster or earthquake instruction for employees (e.g., hospitals, schools, several types of businesses) or the

TABLE 2

LOCUS OF MOTIVATION FOR HAVING EARTHQUAKE MEETING

Locus	Number	Percent
Group members	23	19.8
Group leaders	38	32.7
Group characteristics:	55	47.5
Legally required	25	21.6
Group's functions, required information	24	20.7
Other structural necessity	6	5.2
Total	116[1]	100.0

[1] Information was missing on 19 groups

purpose of the group was to provide service to the community (e.g., scouting groups, veterans' groups, community improvement groups, civic pride groups). In only about five percent of the groups did other organizational features of the groups result in earthquake presentations. One of the most common of these was the necessity to find weekly or monthly speakers for social or service clubs' luncheon meetings.

For those groups which were already in existence (disregarding emergent groups for a moment), it is clear that features of the groups themselves were a powerful force in initiating earthquake concerns in the stability groups (Table 3); 50 percent of all presentations were attributed to organizational needs. For the stability groups, then, factors not necessarily related to the developing social climate may have been instrumental in the occurrence of these presentations. For example, several schools are included in the stability groups. Teachers frequently mentioned being briefed in September or October (i.e., near the beginning of the school year) on earthquake preparedness plans and earthquake drill procedures. When the organizers of these faculty meetings (usually a principal or other administrator) were contacted, they replied that such guidelines are reviewed every year to remind staff about upcoming drills and emergency procedures. Routinely, the school organizers denied that this review was prompted by anything other than required school policies.

For the groups that experienced some sort of expansion, however, the inputs of group leaders were especially important as motivations for having meetings; over 57 percent of the expansion group organizers claimed responsibility for sponsoring an earthquake presentation. As can be seen in Table 4, which breaks these motivational sources down according to the involvement typology, the influence of leaders is just as important for the emergence groups as for the expansion groups.

TABLE 3

STRUCTURAL IMPACT BY MOTIVATIONAL SOURCE: ROW PERCENTAGES

	Locus of motivation				
Structural impact	Members' concerns	Organizers' concerns	Legally required	Organizational objective	Structural features
Expansion groups	14.3	57.1	14.3	14.3	0.0
Stability groups	20.6	29.4	23.5	20.6	5.9

TABLE 4

MOTIVATIONAL SOURCE OF MEETING BY EXTENT OF INVOLVEMENT: ROW PERCENTAGES

Extent of involvement	Motivational source: Members' concerns	Organizers' concerns	Organizational needs	Total	Total number
Emergence-continuing	0.0	60.0	40.0	100.0	5
Emergence-singular	50.0	50.0	0.0	100.0	2
Expansion-temporary	0.0	50.0	50.0	100.0	4
Expansion-singular	33.3	66.7	0.0	100.0	3
Stability-continuing	40.0	0.0	60.0	100.0	5
Stability-temporary	25.0	0.0	75.0	100.0	8
Stability-singular	19.1	33.7	47.2	100.0	89

Within each structural impact category, for those groups which had greater continuity of involvement (i.e., whose involvement was sustained), organizational needs were important. For both stability-continuing and stability-temporary groups as well as for emergence-continuing groups, the objectives of the organization (particularly those which are related to providing community preparedness services) were the dominant form of organizational need. In each case characterized by a singular involvement with an earthquake topic, organizational needs were either non-existent or were represented to a lesser degree. Stability-singular groups accounted for 92 percent of the groups who held earthquake meetings because they were legally required to do so.

Two conclusions, both requiring additional investigation, can be drawn from these findings.

Organizational Purposes and Sustained Involvement

Features of the organization (its responsibilities, needs and goals) are important in determining the duration of a group's involvement in earthquake matters, despite the impact earthquake concerns have on the group's structure. The more compatible earthquake concerns were with the organizations' needs and goals, the more likely sustained involvement would result. If groups already are oriented toward emergency concerns (as are the Explorer scouting groups) or if they exist primarily because of earthquake concerns (as do all of the emergent-continuing groups), events in the social climate may attain a much greater degree of importance. These groups have "built-in" earthquake-related incipient interests which become aroused. This arousal can then be sustained because of the close fit between earthquake events and groups' principal goals.

For the existent groups, organizational means for incorporating these interests are already functioning. For example, the Explorers already had established relationships with the Los Angeles police department and the Civil Defense offices and had run simulated disaster exercises prior to their concern with earthquakes. Once the Explorer Council got interested in including emergency response for earthquakes into their programs, they already had the necessary contacts established with public safety agencies who could direct their training exercises and could establish precisely what their role would be in such disaster situations. Because of the centralized structure of the Council and its authority over individual posts, communication and influence channels were already extant, functioning to distribute earthquake program information and to legitimize its value and importance for the group. For such groups, (cells D, E, G) sustained attention to earthquake topics was easier to maintain because of their organizational goals.

The impact of saliency. However, the relationship between duration of attention and the compatibility of group goals cannot explain why some groups remain unchanged (cells D and G) even though they incorporated earthquake concerns, while other groups (cell E) underwent some sort of structural transformation (even though all such examples were relatively short-lived). What accounts for the differences between the stability and expansion groups that had a sustained interest in earthquake matters?

A major differentiating criterion between these two classes of attending groups is the degree to which earthquake concerns became salient as a special concern for the group. The stability groups with sustained interest all sponsored some sort of an earthquake program that was limited in scope. For example, group care institutions (hospitals and schools) paid a great deal of attention to earthquake planning, their chief concern being what to do with their charges

during and after a disastrous earthquake occurred. However, such attention was limited in scope, lasting usually only a few weeks until emergency plans were written (or revised) and the staffs briefed. Once their concern with safety was satisfied, earthquakes ceased to be salient topics for group attention. Also, organizations which functioned as sources of information for the community incorporated earthquake presentations within their on-going lecture series, usually covering only a few weeks. Public libraries and university lecture programs provided forums for earthquake presentations because they were felt to be "topical," that is, of current interest to the people who were served by these information organizations. No necessary changes in the group's formats or structure were required. Hobbyist groups oriented toward community service (e.g., some of the better organized CB radio groups) also fall within this class. No organizational change was necessary for these groups to invite law enforcement officials to address their members and suggest ways that their group could be useful after an earthquake disaster. Such interest usually spanned several meetings and involved some minimum amount of planning, but was not a lasting salient interest.

The groups which make up the stability-continuing category are all (with the exception of one scouting group) Mormon-affiliated groups which sponsored earthquake meetings. Since the Mormon church places a great deal of emphasis on being self-sufficient and prepared for any type of emergency situation, earthquake preparedness was included in their on-going programs and discussions. No organizational changes were necessary for its incorporation; but since all types of preparedness are directly related to the philosophy of the church, a continuing interest in the topic was sustained.

For the groups that experienced an expansion of the group's function or structure in conjunction with a sustained interest in earthquake matters,

earthquake threat became, at least temporarily, a very salient concern. However, the reasons for this saliency differed in three general ways, although only two types of groups are involved--service clubs and schools. The Explorer group has already been introduced above. In this group, a new coordinating council specifically organized around earthquake response planning was formed to investigate possible alternatives open to the groups and to set up informational and training sessions. Once this planning was completed, the new unit became inactive. Ostensibly, however, it could be reactivated in the event of an actual earthquake and function as an information post for Explorers who wanted to be of assistance.

The schools represent two very different ways in which earthquakes became salient. A large adult school in the South Bay area sponsored, for credit, a six-week course on earthquake preparedness. The impetus for this came, not from the school, but from a faculty member of the school who was also a member of an emergent group (composed of home economics teachers) that was attempting to promote its preparedness presentations as a merchandizable commodity. The course, entitled "Disaster Preparedness in the Home," only had an enrollment of around 25 people (in comparison with a course on Italian art, offered at the same time, which had an enrollment of 150 people). Because of its low attendance, the school has decided not to repeat the course. In this instance, a new unit (i.e., a new course) was added to the school's curriculum because of the influence of one of the group's members (a person, possibly, with a vested interest in advertising the services of another group of which she was a member).

In contrast, two school groups in the Palmdale area--one a parents' advisory group and the other the school's administrative staff--temporarily expanded their group's concerns to encompass earthquake threat and planning.

The parents advisory group, concerned about the Uplift, questioned the completeness of the district's planning to cope with such a disaster. In conjunction with the high school's administrative staff, the district's earthquake plans were revised. As part of this revision, a new provision for a parents' group to respond immediately was included. A small group of parents, selected and trained each year, would report immediately to the school after a destructive earthquake event to assist the school's faculty with crowd control problems.

In a Palmdale elementary school district, the district's only nurse (for 3400 children at seven different school sites) became concerned about the lack of medical assistance available in the event of an emergency. Her concern was heightened by a meeting she had attended in Palmdale which had focused on the Uplift and the inevitability of a major quake occurring at some time in the future. The nurse arranged two district-wide in-service programs for all teachers; one on the more technical aspects of earthquake engineering and prediction, the other on first aid and emergency medical care. With the backing of the district, she also initiated "health aid action teams," teams of teachers at each school who were given both a general first aid course and a CPR course. Once this initial training was completed, however, the teams lapsed into inactivity.

In these instances, group expansion was related to the saliency of earthquake topics for some key person or group within an organization--in one instance salience was motivated by entrepreneurial self-interest, in the other by proximity to what was believed might be a disaster precursor. In the stable groups, earthquake interests could be sustained by regular organizational devices. Earthquake matters were not deemed salient enough, by themselves, to cause these groups to resort to extraordinary measures to cope with them. In this way, their "normalcy bias" was, at least partially,

retained. Earthquake matters could be handled within the existing framework of these groups, even though some groups did sustain their interest in such matters over time. Most of those groups that experienced some structural innovation, even though this was quite brief in all cases, were sufficiently aroused and concerned about earthquake topics to perceive that extraordinary measures were needed to deal with them.

Structural Change and the Interest of Organizers

A second conclusion about extent of involvement applies to the structural impact of earthquake topics on the groups. The influence of concerned persons within groups (either group leaders or people who can step into a role of temporary responsibility as meeting organizers) is especially important in determining what impact earthquake topics will have on a group's structure. In all groups where structural innovation took place, an organizer's or leader's concern with the earthquake topic accounted for one-half to two-thirds of all group actions.

Since organizers are key figures in promoting earthquake presentations, their decision-making processes must be investigated further. Two factors stand out as quite important in these processes: informal contacts and the awareness of predictions.

Informal contacts. It is clear from Table 5 that innovation in organizational structure (either expansion or emergent) is definitely related to whether the leader or organizer got the idea for the meeting by talking to others. This finding suggests that organizers, while being interviewed, may have under-represented the concerns of group members about earthquake matters. As Table 6 shows, co-workers and other group members were the most likely discussion partners who gave organizers the idea to have an earthquake meeting.

TABLE 5

ORGANIZER'S RELIANCE ON OTHERS FOR IDEA TO SPONSOR EARTHQUAKE PRESENTATION BY EXTENT OF INVOLVEMENT

	Idea came from talking with others	
Extent of involvement	No	Yes
Emergence-continuing	0.0	100.0
Emergence-singular	0.0	100.0
Expansion-temporary	25.0	75.0
Expansion-singular	0.0	100.0
Stability-continuing	60.0	40.0
Stability-temporary	22.0	78.0
Stability-singular	40.0	60.0

TABLE 6

LEADERS' DISCUSSION PARTNERS WHO INFLUENCED THE DECISION TO HOLD EARTHQUAKE MEETING

Discussion partners	Number	Percent	Adjusted percent[2]
Co-workers	36	29.3	53.7
Disaster worker	29	23.6	43.3
Other group members	30	24.4	44.8
"Everybody"	15	12.2	22.4
Neighbor or friend	9	7.3	13.4
Children	3	2.4	4.5
Adults in own family	1	.8	1.5
Total	123[1]	100.0	

[1]This total reflects multiple coded answers from 67 organizers who said they had talked with others who gave them an idea to have this meeting and who could remember who their discussion partners were.

[2]Base = 67

One might hypothesize that the groups which had experienced the greatest degree of change--the expanded and emergent groups--would have resulted from the largest amount of informal communication. It is reasonable to assume that organizational innovation would require a great deal of members' support and that group emergence requires a widespread, common base of support among potential members. Table 5 verifies that the organizers of such changed groups were surely more likely to have gotten their ideas for the initial earthquake-related presentation from others than did those in unchanged groups. In other words, organizers were not acting totally on their own; they did require some basis for believing that such a topical presentation was of interest to others in their group.

However, as indicated in Table 7, of those who did talk to others, the organizers of unchanged groups were much more likely to have used a wider variety of discussion partners; and those of the emergent groups were likely to have used the fewest types of partners.

This is a rather surprising finding. If group leaders and organizers had been exposed to communications from several sources within their networks, why wouldn't earthquake concerns become more salient, leading to greater organizational accommodation of earthquake topics? Conversely, if organizers were exposed to inputs from only one type of discussion partner, how could these exchanges have had such a dramatic impact? This question is especially relevant when the emergent groups are taken into consideration.

A possible explanation has already been touched on in the discussion of saliency of earthquake topics as they are related to group purpose and structure. The emergence groups (with only one exception) all exist solely because of their pre-occupation with some sort of earthquake-related concern. Obviously, in the formative stages of these groups, some exchange of earthquake-

TABLE 7

NUMBER OF TYPES OF DISCUSSION PARTNERS USED BY GROUP ORGANIZERS BY STRUCTURAL IMPACT: ROW PERCENTAGES

Structural impact	Number of discussion partners			Total number
	One	Two	Three	
Emergent	71.4	28.6	0.0	7
Expansion	60.0	40.0	0.0	6
Stability	61.7	30.1	8.2	73

relevant information took place between interested individuals. In all of these groups, a small core or a single person was responsible for coordinating the first meeting. As will be further discussed later in this chapter, the discussion partners in each case were well known acquaintances of the organizer who shared the organizer's concern with, and orientation toward, a particular earthquake subject (whether it was the ability to predict earthquakes, to teach preparedness courses, to learn more about preparedness or prediction, or to rebut earthquake safety legislation). For the emergence process to occur, then, a cohesive core of similar acquaintances was necessary, a core which exchanged relevant communications directed toward a specific purpose or interest.

For the expansion groups, earthquake concerns became salient because the structures and aims of the groups were amenable to their inclusion. Perhaps because the motivation for change to occur in already-existing organizations required greater involvement of group members (especially for those that developed a more sustained interest), the organizers would have had to become aware of the potential for including this concern into their format. Since these groups did not exist because of earthquake concerns, the salience of the subject would need to be introduced from various sources in order for the idea to be seen as especially relevant for group attention. It should be remembered that topical subjects frequently vie for attention within groups and collectivities. Groups selectively attend to those subjects which can best be meshed into their organizational format and which can best meet needs for the group as a whole. For example, the staff of a Jewish senior citizens center, becoming aware that several of their members were concerned about earthquake danger, sponsored a family workshop and a lecture on earthquake preparedness. Although the center frequently sponsored various types of programs for their seniors, earthquake concerns were considered serious enough for the center to expand its services to all interested persons in their service area for a singular

presentation. This accommodation to an earthquake topic was unusual; other topics and programs had not provoked this type of aroused attention from the group's members. In this instance, discussion occurred both between the seniors (the members) and the staff (the organizers) and among the staff members themselves. For both categories of groups which experienced structural innovations, then, the influence of organizers was of primary importance.

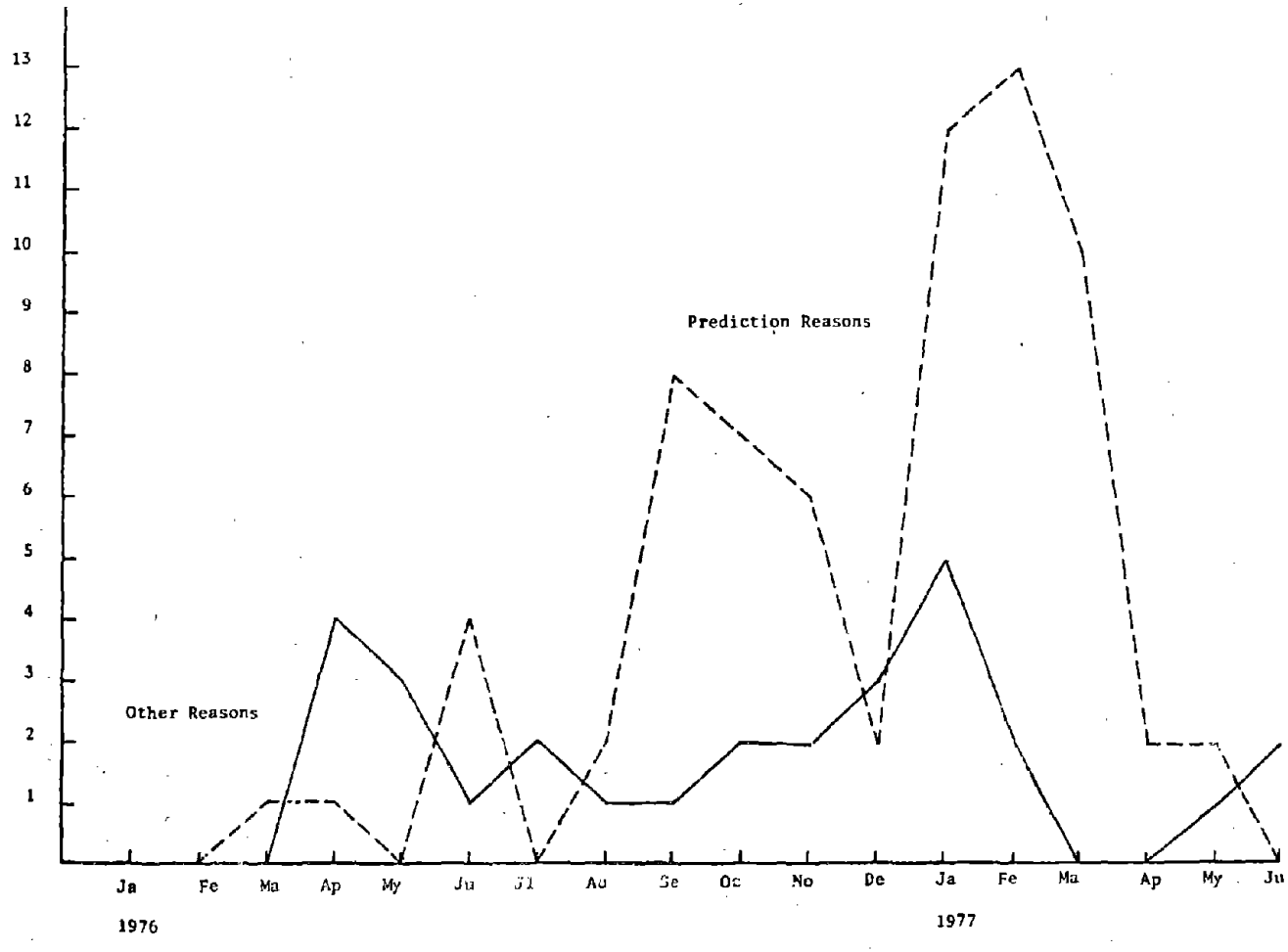
The unchanged or stability groups were least likely to have purposes compatible with earthquake-related topics. As we have seen, in almost 40 percent of these groups the organizers did not get their ideas for an earthquake presentation from others (in comparison to only 14 percent of the expansion and none of the emergency groups). Most of these non-personally-influenced meetings ostensibly resulted because of group characteristics which made earthquake-related topics mandatory (see Table 2). However, in the personally-influenced instances, the extensiveness of organizers' discussions with various types of partners (not just those in the group) may have been necessary for earthquake concerns to be responded to within a noncompatible organizational context. Only after taking part in several discussions with different types of discussion partners may earthquake concerns have become salient for the leader, thus creating the perception that some sort of organizational attention to earthquake matters (usually focusing on preparedness) was "appropriate" within the group. For those groups that were to remain relatively unchanged vis-a-vis earthquake matters, it appears that the more communication networks to which the organizers were exposed that showed some arousal of interest in earthquake topics (usually relating to earthquake predictions or earthquake threat), the more appropriate such a topic became as the subject for a meeting.

The awareness of predictions. In Part Four we learned that a great deal of informal discussion focused on earthquake predictions. It would seem reasonable to hypothesize, then, that formal collectivities might also respond, through the sponsorship of meetings, to earthquake prediction events.

In order to investigate this hypothesis, interviews were coded to include mentions of earthquake predictions as reasons why the meetings were held. Figure 2 shows the distribution of meetings held specifically because of predictions compared with meetings held for other reasons. As demonstrated in this figure, meetings held for prediction reasons closely correspond to the April prediction events, indicating that the Whitcomb announcement combined with the media's heightened interest in the Uplift had a substantial impact in calling the attention of groups to earthquake matters. From August to January, there is a modest increase in meetings that were motivated by prediction concerns. This trend is quite different from that displayed by all groups over the study period (Figure 2), which shows a gradual decrease from September to December and then a dramatic rise in January. In this respect, groups that were somewhat motivated to sponsor a meeting because of prediction concerns much more closely approximated the response of the diffuse crowd than did groups with other motivations.

Earlier in this chapter, the informal discussions organizers had with others were found to be important for the occurrence of non-organizationally required meetings. Now, the importance of informal discussions and the incidence of meeting occurrences due to prediction concerns will be considered.

As Table 8 indicates, there is quite a strong relationship between an organizer's discussion with others who provided the idea to have an earthquake meeting and a concern with earthquake predictions as a principal motivation for having the meeting at a particular time. In this instance, over four out of every five organizers who arranged for an earthquake meeting because



MONTHLY DISTRIBUTION OF MEETINGS BY MAJOR REASON FOR SPONSORING THAT MEETING

FIGURE 3

TABLE 8

ORGANIZER'S RELIANCE ON OTHERS FOR IDEA TO SPONSOR EARTHQUAKE PRESENTATION BY A CONCERN WITH EARTHQUAKE PREDICTION AS A MOTIVATION FOR THE MEETING: ROW PERCENTAGES

Prediction was motivation for meeting	Discussion with others		
	No	Yes	Total
Yes	16.7	83.3	100.0
No	40.5	59.5	100.0

of prediction concerns got the idea for having the meeting by talking to others in their social circles.

Table 9, which breaks down the number of discussion partners who engaged in these exchanges with organizers, further illustrates the importance of these informal networks. According to these findings, the more discussion partners cited as sources of inspiration for having a meeting, the more likely earthquake prediction concerns were mentioned as reasons for having the meeting. It was not just the discussion of earthquake matters with others that was important (although such discussions clearly had an impact), it was the extensiveness of one's network contacts which made prediction concerns salient for those in leadership roles in organizations.

The question is raised whether this saliency of prediction concerns had any relationship to the extensiveness of a group's involvement in earthquake matters. Were groups with greater involvement more likely to have been motivated by special prediction concerns than those which sponsored meetings for other reasons?

According to Table 10, the only groups to have been overwhelmingly motivated by prediction concerns were the emergence-continuing groups, the groups which were most likely to exist because of earthquake concerns. Since their groups include two hobbyist groups interested in developing amateur prediction methods, a high school club that became interested in earthquake predictions and preparedness, and a group merchandizing earthquake preparedness lectures, it is not surprising that they all held initial meetings (or emerged formally) around earthquake prediction concerns. For the other categories of group involvements, no clear pattern is discernible (possibly because of the small number of categories) regarding the effect of prediction-motivated meetings.

TABLE 9

NUMBER OF DISCUSSION PARTNERS ABOUT EARTHQUAKE MATTERS BY PREDICTION MENTIONED AS MOTIVATION FOR HAVING EARTHQUAKE MEETING: COLUMN PERCENTAGES

Motivation for meeting	Number of discussion partners			
	None	One	Two	Three
Prediction mentioned as meeting motivation	25.0	42.9	60.0	100.0
Prediction not mentioned as motivation	75.0	57.1	40.0	0.0
Total	100.0	100.0	100.0	100.0
Total number	20	28	15	4

TABLE 10

PREDICTION MENTIONED AS MOTIVATION FOR HAVING AN EARTHQUAKE MEETING BY EXTENT OF INVOLVEMENT

Extent of involvement	Prediction as motivation		Total number
	Yes	No	
Emergence-continuing	100.0	0.0	4
Emergence-singular	50.0	50.0	2
Expansion-temporary	0.0	100.0	2
Expansion-singular	0.0	100.0	1
Stability-continuing	0.0	100.0	3
Stability-temporary	40.0	60.0	5
Stability-singular	46.9	53.1	49

If we look only at the already-existing groups collapsed on the structural impact dimension (i.e., at the expansion and stability groups), however, we discover a counter-intuitive finding. Prediction concerns were not at all important motivational factors for the expansion groups, but played an important part for the stability groups (Table 11). One might expect that predictions would be especially important factors influencing whether groups would add new functions or extend their responsibilities.

However, using prediction concerns as the motivation for originally scheduling such a meeting may not have been as important for this purpose as was the extent of discussion about prediction concerns that took place during the meeting (regardless of the prediction-related motivation).

Table 12 indicates that predictions were given some attention in over 60 percent of the meetings held; and that in a third of those predictions were discussed a "great deal." As can be seen in Table 13, emergence groups again demonstrate the important position earthquake prediction concerns held for them. Predictions were discussed in all of these six groups and quite extensively in two-thirds of them. The expansion groups, although none reportedly discussed predictions to any great extent, did have a significantly large number of meetings (80 percent when combined) where predictions at least received some attention. Stability groups, those which did not experience any impact due to earthquake considerations, had a much higher incidence overall of extensive prediction discussions. However, almost 42 percent of these unchanged groups also sponsored meetings at which predictions were not discussed at all. Stability group meetings account for over 97 percent of the meetings which had no prediction discussions.

TABLE 11

STRUCTURAL IMPACT ON ALREADY-EXISTING GROUPS BY PREDICTION CONCERNS AS MEETING MOTIVATIONS

Structural impact	Prediction as motivation		Total number
	Yes	No	
Expansion	0.0	100.0	3
Stability	43.9	56.1	57

TABLE 12

EXTENT OF DISCUSSION DIRECTED TOWARD EARTHQUAKE PREDICTIONS DURING GROUP MEETINGS

Extent of discussion	Number	Percent	Adjusted percent
A great deal	21	15.6	20.6
Some	42	31.1	41.2
Predictions not mentioned	39	28.9	38.2
Unknown	33	24.4	--
Total	135	100.0	100.0

TABLE 13

EXTENT OF PREDICTION DISCUSSIONS DURING MEETINGS
BY EXTENT OF GROUP INVOLVEMENT

Extent of involvement	Extent of discussion		
	Great deal	Some	None
Emergence-continuing	60.0	40.0	0.0
Emergence-singular	100.0	0.0	0.0
Expansion-temporary	0.0	66.7	33.3
Expansion-singular	0.0	100.0	0.0
Stability-continuing	33.3	66.7	0.0
Stability-temporary	28.6	28.6	42.8
Stability-singular	17.3	39.5	43.2

Emergent Groups

We became aware of only a few earthquake-oriented groups that emerged (or came into existence) during our study. These rare collectivities ranged from neighbors coming together for a single meeting about earthquake safety to a fully organized community group which brought legal action against a state agency trying to implement seismic safety legislation.

These emergent groups have been categorized into three types on the basis of the needs which the new collectivities fulfilled for their members.

Mutual assistance groups. Mutual assistance (or self-help) groups emerged to assist participants plan cooperatively for a coming quake. The purpose of such a group was to protect or to reduce the hazards affecting its members by providing information on earthquakes, predictions, or preparedness and by coordinating group planning. Mutual assistance groups are examples of classic "grass roots" groups, that is, similarly-disposed people acting to solve a common problem. The emphasis in such groups was on taking measures to reduce earthquake dangers for the group members to whom the potential effects of a destructive quake were a primary concern. Since the purpose of the group was for members to assist each other cooperatively, action was more likely to take place through already-established, informal networks than through new associations.

Only two self-help groups emerged during the study period. Both of these groups were neighborhood groups, and both were singular in their duration. The first group was simply a collection of neighbors and friends coming together to get more information on earthquake preparedness; the second group actually formulated neighborhood responsibility plans.

Neighborhood Meeting 4/29/76

Mrs. P's neighborhood, located in a mountainous canyon area of Los Angeles, has a history of semi-formal associations to preserve and protect its rather secluded life style. Within the neighborhood (consisting of two small blocks), mutual assistance plans had already been formulated to secure the area in the event of a brush fire, a major threat in that isolated, hard-to-reach area. Mrs. P said that she had originally organized the fire brigade by going from door to door and soliciting her neighbors' help. Mrs. P characterized the neighborhood as a tightly knit community in which people have known each other for quite awhile because there is very little transiency in the area.

Around late April, Mrs. P said that she ran into neighbors at neighborhood stores who were worried about the possibility of an earthquake. Parenthetically, Mrs. P said that she thought there had been an earthquake prediction at about that time "which always raises public awareness." Because of these discussions, Mrs. P said she became aware that they "were woefully unprepared in case of a disaster of any kind." Mrs. P then arranged a neighborhood meeting very quickly "while the awareness is at a certain level, because otherwise people tend to put it off and do nothing." Mrs. P called the Civil Defense office, and a meeting was scheduled a few days later. The meeting attracted about 20 people, at least one member of each household in the neighborhood. At this meeting it was decided that some collective planning should be done for their immediate neighborhood. A list was made of the people in the neighborhood who had medical problems or who had small children. The neighbors discussed who would have the responsibility for turning off utilities at homes if the owners were not present and who would try to contact the authorities if their road were blocked by a landslide.

Neighborhood Meeting 5/13/76

Mrs. L, a new resident to southern California, is a registered nurse who has had special disaster training for medical emergencies. In late April, Mrs. L noticed that people were "acting skittish" about the possibility of an earthquake. "They were saying, 'Well, we're going to have an earthquake any day now,' that kind of thinking." Mrs. L asked her neighbors and the parents of her daughter's friends what to do if a prediction were made or what types of protective measures she should take. Because she had anticipated that they would know what to do and would treat these precautions rather routinely, "like people do hurricane warnings in North Carolina (her home state)," Mrs. L was surprised at the responses she got. Soem people were annoyed and reportedly said, "We don't think about it. Californians know how to live with the threat of an unexpected earthquake."

Because Mrs. L felt that these women were "terribly uninformed," she organized a meeting and invited a Civil Defense speaker to talk on earthquake preparedness. Several of the women Mrs. L invited to the

meeting (parents at her daughter's private school, especially) initially responded angrily to her actions, reportedly saying, "Why do you want to drag things like that up? You just scare people to death when you talk about it," and "Why don't you just forget about it? When they happen, they just happen." The meeting was attended by only a handful of women, most of whom were Mrs. L's neighbors who she felt came only to be polite.

Entrepreneurial groups. These were the most numerous groups to emerge during the study period. Unlike the mutual assistance groups, earthquake concerns were not primary concerns for the organizers of these groups, but of only secondary importance. Entrepreneurial groups served more enduring interests of the organizers by offering merchandized services for potentially endangered and concerned others for whom earthquake concerns might be primary. These groups were oriented toward attracting an audience that would make use of the services and information being offered.

Clubs were found to be the most frequent groups employing the strategic use of earthquake topics (see Chapter 3). In the same vane, three of the continuing-emergence groups that used this strategy were also clubs: Youth for Earthquake Safety, Quake Watchers, and Earthquake Forecasters. Quake Watchers was the most formally structured organization, including a leadership hierarchy, a newsletter, and an emergency "hot line" for reporting anomalous phenomena, although the group never held any meetings. Both Youth for Earthquake Safety and Earthquake Forecasters were less formal groups with ambiguous memberships. Although both held meetings, they were not well attended.

The fourth emergent group in this category, Creative Home Economics Consultants, was a formal group of three to five women who used their teaching and professional skills to put together a very appealing presentation on earthquake preparedness aimed at individual households. This was the only group that was exclusively entrepreneurial, not soliciting outsiders to become members.

Creative Home Economics Consultants

A small group of home economists, the number shifting between three and five members, were the "core" members of this group. All of the women in the group knew each other quite well. Some taught at a local community college; some of them also worked together as consultants for local restaurants. All were quite active in home economics organizations, and one put together a college video course of various methods of food preparation.

Following the release of the Whitcomb announcement and the increase in concern about the Palmdale bulge, this group of friends became interested in preparedness planning in the home. According to one group member, they started doing research on the problem of what could be done to adequately prepare for an earthquake and were appalled by the lack of materials available. In this search, they not only sought out library materials, but also contacted any public service organization they thought might have such resources. Because of this insufficiency, they saw a need to develop a program and to make materials available to the general public, informing people how to safeguard their homes.

It was hoped that the group would be able to make a profit on their presentations for the members' initial investment of time and money required to develop this program. The group originally thought they could charge between $300 and $500 for making their presentation to large groups and could sell small "how-to" pamphlets to the attendees.

Since the college in which they taught served the residents of the city of Downey, CHEC members contacted the city manager to see if they could present their program for community residents. The city agreed to sponsor the program entitled, "Disaster Preparedness in the Home." Announcements were placed in local papers, letters were sent to city employees and community groups, and flyers were sent home with school children. Their first meeting, held on July 26 in the Downey Auditorium, attracted about 300 attendees.

The presentations made, the quality of information, and the number of items used to illustrate how to survive were all quite impressive and well thought out. The major theme emphasized in their program and pamphlets was self-sufficiency. One speaker at the Downey meeting said that the notion of self-sufficiency is a "good old American ideal of each family taking care of itself. Why should the government take all the responsibility for taking care of us? Government agencies are going to be overburdened with citizens who cannot take care of themselves. So let's don't add to their burden; let's become self-sufficient." Their programs told people both how to prepare for an earthquake and what to do during one. Also, family planning and earthquake drills were cited as being important, especially for families with young children.

In order to promote their organization (which had received glowing praise from the mayor of Downey for their very professional and informative presentation), CHEC sent out letters to the mayors of sixty

other Los Angeles County cities. The response to these letters was, however, disappointing. Only one or two inquiries were received, and no new programs were scheduled.

During the summer of 1976, however, CHEC members also contacted agencies that were interested in preparedness and community education to make them aware of their services. In August, they met with the division head of Curriculum and Instructional Services for the Los Angeles County school system. They agreed to prepare an instructional program for home economics teachers on what to do during and after a quake. The information presented in that program would then be distributed to other teachers by the home economics instructors throughout the county. In November, CHEC also presented their program for the Emergency Preparedness Commission at the invitation fo Los Angeles city's Civil Defense officer (who had been approached by one of the CHEC members at an earlier date).

The group was obviously having trouble finding appropriate outlets for its services, and only one community and one governmental presentation were made during 1976. CHEC members continued, however, making contacts with government officials they thought might help promote their group. Such efforts were somewhat successful in the first six months of 1977, resulting in presentations to four government or emergency organizations: the Industrial/Business emergency preparedness seminar sponsored by DCPA in San Bernardino in January; the annual meeting of Southern California Emergency Services Association in Santa Barbara in April; the National Red Cross workshop in Pasadena in June; and Mayor Bradley's Task Force on Earthquake Prediction, also in June.

In the public sphere, they used many of their professional networks to promote their program. In January, an adult school class, taught by one of the CHEC members, was offered as a six-week course for credit. The course was held after a CHEC member approached the principal with the idea for the "timely course," which immediately followed the Minturn prediction in December. In February, the group arranged to present a program to the public on their college campus. The program, also featuring Red Cross and Civil Defense speakers, was attended by over 200 people, many of whom were required to attend as a class assignment in a childhood development and education course. Unlike the Downey program, this presentation was coordinated with a very sophisticated slide program instead of displaying survival materials themselves. Also the group was selling their newly-published booklet, How to Survive an Earthquake, for $2.50.

Additional classes and lectures were also presented for various other school-related groups (or were advertised through school groups): a church-sponsored elementary and junior high school scheduled the program for their students in February; the California Home Economists Association convention in San Diego in April; four workshops for the public in April which were advertised through and held at junior high schools in the Downey area (and which were partially sponsored by the city of Downey); an in-service workship for home economists and vocational education teachers held in Downey in April; and a program for the general public held at a San Fernando Valley community college in April (a school that is close to the home of one of the CHEC members).

In almost each instance, these meetings resulted from efforts by CHEC members to promote their program and service. Not until after June, 1977, did CHEC begin to receive unsolicited invitations to speak; however, all of these requests came either from professional or educational organications or from emergency preparedness groups holding large meetings. Their services were still not directly reaching the general public.

Quake Watchers

This group was started by two friends, one who had a long-time interest in earthquakes and who was described as an "earthquake freak" (Mr. C), and the other who enjoyed experimenting with home computers and scientific "gadgets," considering himself to be an "inventor" (Mr. W). This group was the most formal "club" to emerge during our study, having a definite purpose, role hierarchy, and membership recruitment. The purpose of the club was both to provide preparedness information to members through the club's newsletter and to collect systematic data recorded by the members to predict earthquakes and issue short-term warnings.

In late 1975 and early 1976, Mr. C encouraged Mr. W to invent something that would tell him when an earthquake was going to occur. In February, 1976, W produced a "tiltmeter," looking something like a carpenter's level but calibrated to allow the observer to tell if any tilt had occurred since the last observation. They began monitoring the device daily for two months. In late March and early April, 1976, W reported that they observed "a great deal of tilt, then a dramatic return to normal." Two days after the readings returned to normal, an earthquake occurred in Sylmar. Because of recent media interest in the Palmdale bulge and in the case of amateurs in the prediction of the 1975 Haicheng quake, C and W decided to form a group of interested persons who would comprise an amateur network to monitor tiltmeters daily around southern California in an effort to predict local earthquakes.

C and W had the "tiltmeters" reproduced and ran three ads in the Los Angeles Times soliciting members for their new club. The first ad ran on April 20, the day before Whitcomb's announcement was first publicized. Over the next few months, W was interviewed by several different television news reporters and appeared on a community-oriented talk show.

By October, they had received about 500 inquiries from interested persons (most from those seeing the Los Angeles Times ads), but only about 60 had officially joined the club. According to W, inquiries came either from people (or organizations) that were interested in the science of earthquake prediction or from "people who were scared to death of earthquakes."

Members were required to pay a registration fee of about $25.00, most of which paid for the tiltmeter device and a monthly newsletter. New members also received a packet of post cards which were to be mailed into the club each month with the daily tiltmeter readings recorded. Once these cards were received, W planned to plot them on his home computer and compare the various readings for different areas of the county to see

if any gradual changes were taking place.

Members were also given a card to carry which had a special "hot line" phone number. If the member observed a dramatic shift in his/her readings, he/she was supposed to call into the club headquarters immediately. W would then call other members in the caller's area to determine whether their readings had also changed. If the change was confirmed, all Los Angeles area members would be called and "warned" that a quake was likely within the next few days. (There was also a somewhat vague plan to contact local officials with such information.) During the study period, only one or two such events were reported, but both occurred because the tiltmeter of the calling member had been unintentionally moved. No other members had recorded shifts at the same time.

C and W felt that the newsletter was an important feature of their club since people who are educated would not panic if a prediction were issued but would know what to do. The newsletter (which was quite professionally produced) contained various types of information on earthquakes and earthquake-related topics; an explanation of how tiltmeters work; a summary (although somewhat inaccurate) of Whitcomb's "prediction"; an announcement about the telephone company's mailing of preparedness information in September and why it was important; a "new member's" testimony about why he joined the club and how worthwhile he thought it was; a request to solicit additional members to establish a "large network of working tiltmeters"; a call for CBers to make their services available to emergency workers after a damaging quake; and a lengthy article on the need for seismically designed buildings.

Until late November, 1976, the group was still getting some inquiries, but fewer members were being enrolled. When the Minturn prediction was made, however, several new members were signed up. Minturn, who W considered a "phony," was seen as a mixed blessing for the club. His prediction motivated new members to join the club; but the media had become less favorable toward the club's method of trying to forecast a quake. In mid-December W was interviewed by a television reporter who had made "very sharp, cutting, nasty" comments about the group's methods of prediction. W, however, staunchly supported the use of amateurs and said he had contacted Dr. Peter Ward of USGS who was interested in using volunteers to monitor a variety of phenomena in conjunction with members of the scientific community.

By early 1977, the club was not receiving many monthly recordings of observations and the enrollment of new members had again fallen. By March, 1977, the newsletter was discontinued because of mailing and printing costs. No meetings of the club were ever held.

Youth for Earthquake Safety

Youth for Earthquake Safety (YES) was almost single-handledly organized by an energetic high school sophomore, Bruce, who obviously enjoyed being "in the thick of things" on campus. Besides organizing YES in the fall of 1976 Bruce was also president of two other campus clubs, belonged to the ROTC program on campus, and was involved in theatrical productions. Bruce had also worked for the local Chamber of Commerce and had been involved in activities for local politicians. Bruce was the "sparkplug" and central figure throughout the club's existence.

In late September, 1976, the movie "Earthquake" was shown for the first time on television. Upon seeing the movie, Bruce, who had recently done a paper on "earthquakes through history" for one of his classes, was angry about the erroneous reactions to the quake presented in the film. Bruce and a friend, Dale, wanting to know whether people really knew what actions to take during an earthquake, canvassed a shopping center asking people questions. Out of approximately 530 people polled, Bruce reported that at least three-fourths of them "had no idea" what to do during a quake, and almost no one had taken any preparedness measures.

Bruce and Dale decided to start a club to distribute earthquake information, a service they felt was worthwhile. Originally, they tried to solicit memberships from friends and relatives. Anyone who contributed at least fifty cents to the club became a "member," but no membership roster was ever compiled. Since the purpose of the club was to provide service, Bruce and Dale also walked "up and down Van Nuys Boulevard trying to get (business) people to put (earthquake posters) up" in their stores and offices, and to become club "members." This tactic met with only modest success; some merchants were willing to display the posters and even fewer became members. One insurance company did contribute $50.00 to the club (however, Bruce's mother worked for the company and obviously facilitated its involvement). Bruce, trying to make the club truly a "community" service organization, tried to use the local Chamber of Commerce's social events to distribute information about the club to the business community.

Through these recruitment procedures, YES had about seventy-five members; but most of them were one-time-only contributors who were acquaintances or relatives of Bruce and Dale.

Although YES did not become an "official" organization at their high school until January, 1977 (the start of a new semester), the club was informally active between October and December, 1976. Even though some early attempts were made to orient YES's activities toward community service, most of the club's efforts were directed toward involving other students. In early December, the club held its first meeting on campus, attracting about twenty students. At that time, YES members decided to invite two UCLA professors involved in seismic research to address the school's science classes. On December 12, approximately 350 students attended the lecture and slide presentation. During the question and answer period, the speakers answered several questions about the Minturn prediction.

Following the assembly, earthquake preparedness pamphlets were distributed to the students by YES members. Both the Valley News and the Los Angeles Times carried short articles on this meeting.

On January 11, the club held its second meeting, an evening meeting at which a Civil Defense speaker made a presentation on earthquake preparedness. Although the club members had distributed "about a thousand" leaflets about the meeting (both on campus and at supermarkets in the immediate area), only seven people attended the meeting. All were "core" members of YES, being friends of Bruce and Dale. Only twenty-five students, in total, eventually became members of YES, although only four or five came to regular meetings.

Although the membership of the club was quite low, Bruce was extremely enthusiastic about and proud of the club's status and activities. The club reproduced 2,000 copies of the pamphlet, "Earthquake Safety," which they paid for by sponsoring a candy sale. They also sponsored a demonstration by the fire department's paramedic team. That the turnout for this demonstration was large was a source of pride for Bruce, since a dance was going on at the same time. "We had half of the crowd and the dance had half. Considering that we have on the average (only) seven or eight members show up to meetings, we're pretty active." At the end of the 1976-1977 school year, YES was presented with two second place awards for service at the Student Council Leadership banquet. Pridefully Bruce said, "We set history once again on campus," referring to the fact that the club had received these awards after only being in existence for one semester. In the future, Bruce envisioned the club making a movie on earthquake safety, "because there's a lot of pretty girls on campus who would like to do it." In addition, he was trying to have YES sponsor the next homecoming dance and get the local Chamber of Commerce to sponsor an Earthquake Safety Week in early 1978.

Earthquake Forecasters

This "group" was formed in early 1976 by two men who had been interested in earthquake forecasting (a term they preferred to predicting) for a long time. Like YES, membership had very minimal requirements; and, like Quake Watchers, no face-to-face meetings were ever held (although the members did communicate with each other almost daily).

In 1965, Mr. L bought a tiltmeter at a government surplus auction and installed it in his basement. He and his friend, Mr. D, who was a computer programmer for a space research laboratory, worked out a method to plot L's daily tilt readings on a computer in order to forecast a quake. Each evening at 10:00 PM, they would exchange this information over their "ham" radios. In recent years, they had attracted a fairly steady number of people who "joined" them on the radio to listen in and discuss forecasting.

L claims to have successfully predicted the 1974 Thanksgiving Day quake in Los Angeles using his tiltmeter readings which, when plotted by D, exhibited an "exponential" increase in tilt. Without additional readings, however, L and D could not determine where the location of the quake would be. For this reason, they envisioned the usefulness of a network of other volunteers who had similar interests in earthquake forecasting who could monitor tiltmeters on a daily basis.

Because tiltmeters are expensive instruments, L and D decided to try to get funding for their project through scientific institutions. Beginning in late 1974, L started contacting scientists at Caltech about his "global tectonic system" theory of earthquake occurrences and about using a network of volunteers located throughout the southern California area to monitor tiltmeters and to pool their findings for daily computer analysis. L and D felt that such a daily monitoring system would be preferable to the system currently being used by Caltech. (At that time, Caltech collected instrumented tiltmeter readings once a month or so and then analyzed those readings in relation to other monitoring techniques.) L said he did not feel Caltech had a very workable system if they were really interested in saving lives. Rather, his network system would be relatively inexpensive (he estimated that each station would cost $2,200 for equipment and $3,000 for installation by qualified technicians) and would allow the volunteers to communicate events in "real time"; that is, immediately before an event occurs.

At one point in early 1976, L and D thought that Caltech was going to fund their project as part of a large earthquake research grant Caltech had received. Because of this expectation, L collected the names of twenty-five people (besides himself and D) who were participating in their nightly discussions and who would be willing to commit themselves to having the instruments installed in their homes. L said that the only requirement for membership was home ownership, since the tiltmeter had to be set up in a basement area. According to L, all of these people were either employed (several them were involved in the aerospace industry) or retired. Several of them also belonged to the RACES program, a volunteer organization of radio operators who worked with the Sheriff's Department during community emergencies to keep communication channels flowing smoothly.

L said that this group was not interested in receiving salaries for doing the monitoring; rather, L characterized the members as "dedicated people who want to do something now to save lives." The network would be a "real team effort, where all of the members would be able to see the results of their monitoring and be able to see how they were directly making their communities safer."

Although the volunteer project did not get funded, the group (with some minor fluctuation in those who joined in the conversations) was still "meeting" in early 1979 for the daily tiltmeter readings and forecasting discussions.

From these examples it is clear that the organizers of these groups were capitalizing on the "topicality" of earthquake matters while furthering their own, previously existing interests.

For all of these groups (with the possible exception of Quake Forecasters), the popularity of their appeal was closely tied to the arousal of incipient earthquake interests in the greater community. Service was being offered to lessen people's fears and to prepare them for coming quakes. Once these diffused concerns declined (as evidenced by the information-seeking attempts and the extent of the media'a coverage) in early 1977, the appeal of such groups also declined. Their audience and pool of potential members had turned to other, more timely matters.

Issue-oriented groups. An issue-oriented group is a group that actively promotes or rejects some type of anticipated legislative or policy change. Two types of issue-oriented groups could have emerged with respect to earthquake concerns--those that supported pro-safety legislation (proponent groups) and those that opposed such measures (oppositional groups).

Proponent groups would share with the mutual assistance groups a primary concern about the effects of a damaging earthquake on their members. But unlike the mutual assistance groups, they would not share the belief that the effects could be mitigated through their own actions but that some external agent such as the local government would be more effective in mitigating the hazardous conditions. Although their purpose is to protect their members, they would do so by trying to influence the external agent's earthquake policies and preparedness planning. The actions of proponent groups would be oriented toward solving major community problems. During the course of our study, no proponent groups emerged.

Oppositional collectivities, however, did emerge and were some of the most fully mobilized groups identified in this study. Only one of these collectivities, however, could be called an emergent "group," namely, the Citizen's Committee to Save the Littlerock Dam (CCSLD). In two other instances where oppositional sentiment was mobilized, no identifiable group came into existence. While the emergence of CCSLD is described in this chapter, all three events will be considered in Chapter Eight on community resistance to seismic safety legislation.

For these groups, like the entrepreneurials, earthquake effects were, at best, secondary concerns. The primary concerns of the oppositional groups were about the effects of legislation intended to reduce earthquake dangers. Group members believed both that the proposed legislation would affect them adversely and that they could do something to mitigate those effects through collective action.

Littlerock

Littlerock, a small (population 1500), unincorporated town in the Antelope Valley, is the most productive fruit-growing area in Los Angeles County. Although it sits on the edge of the Mojave Desert, the existence of an underground cienega, fed by runoff from the San Gabriel Mountains which is stored and slowly released by the Littlerock Dam, allows peach, pear, and melon agriculture to flourish. However, the majority of the farms are only five to ten acres and none of them, even the largest, is totally self-supporting. The town has no official government positions, although the positions on its three boards--the Chamber of Commerce, the school board, and the Littlerock Creek Irrigation District (LCID)--are elective and their officers frequently function as local political entities.

In May, 1976, the California State Department of Water Resources (DWR) notified LCID (the owners of the Littlerock Dam) that a public hearing would be held on June 10, 1976, regarding the revocation of LCID's permit to store water behind the dam, a dam which DWR had determined would be unsafe during either a maximum design earthquake (of about 8.3 magnitude) or a maximum design flood (of two to three feet overtopping of the spillway). Officials of DWR's Safety of Dams program saw this action as the culmination of at least ten years' effort trying to get LCID to take

serious steps to rehabilitate their dam or to come up with plans for its rehabilitation. For DWR, this revocation action was seen as the last step in a long, unsuccessful process to carry out their legal responsibilities to those who live downstream from the dam. According to LCID, however, $200,000 had been spent to upgrade the dam since 1966 and, for them, the matter was not seen as pressing.

The dam's safety had occasionally been brought up in regular LCID board meetings (although it was not an LCID agenda item in 1977 at all), but it had not been a topic of general community discussion or concern until DWR's notification was made public on May 12, 1976. Several articles and letters to the editor in the local weekly paper following the notification called for citizens to attend all LCID meetings in order to become better informed about the proposed action and to attend the revocation hearing to display their concern over the dam's closure.

The heavily-attended revocation hearing on June 10, 1976, at which the DWR staunchly defended its assessment of the unsafe condition of the dam, was the catalyst which produced widespread community discussion concerning the motives behind the state's actions and the alternatives available to the community to stop the probable draining of "their reservoir" on November 1, 1976. In early summer, an informal group of about half a dozen "concerned citizens" began distributing leaflets at the roadside fruitstands in Littlerock (the major commercial establishments in the area during the summer months) which explained the consequences of the state's actions on local agriculture and asked people to write to their own government representatives in support of the Littlerock citizens. Donations were also solicited to help the local citizens fight this "bureaucratic" decision to "destroy something which does not belong to (DWR)."

Throughout the summer, the LCID board members and manager, although asserting the safety of the dam, continued to look for alternative sources of water for 1977 and applied for various types of funds to rehabilitate the dam. This attempt to work <u>with</u> the state in (what one LCID official called) "a gentlemanly way" came to be seen by some members of the community (particularly the "concerned citizens") as a do-nothing attitude on the part of the district. LCID was seen as being controlled by the state, since it is under the jurisdiction of DWR and must, therefore, comply with DWR's plans to revoke the district's permit. (This perception, however, was hotly denied by an LCID official who saw the board taking a "rational, not emotional" approach to the situation.) This assessment that the "local government's hands are tied" and that something had to be done immediately or the community would face an irreparable loss (both to its economy and its style of life) led the "concerned citizens" group to place an announcement in the local paper stating that a public meeting on "citizen action to save the dam" would be held on September 16. Although only about thirty people attended the first meeting of this group--which officially came to be known as the Citizens' Committee to Save the Littlerock Dam, Inc. (CCSLD)--$7,000 was pledged to fight DWR's proposed actions.

After one brief extension of about six weeks, DWR issued its revocation order in early December, 1976, to prohibit further water storage behind the dam. At this time, CCSLD authorized its attorney to seek an injunction against DWR; and LCID continued to seek another extension in order to complete a computer analysis, initiated in September, of the dam's ability to withstand a large magnitude earthquake. Between mid-December and mid-April, CCSLD was in court three times in attempts to keep the dam gates closed and finally won a temporary injunction against DWR's plan to drain the reservoir. The judge's decision in the April 18 hearing stated that there was a lack of evidence that an imminent danger existed from an earthquake and that the Palmdale bulge was an anomaly, not necessarily an earthquake precursor. Since no clear-and-present-danger criteria could be established as the basis for DWR's actions, DWR would have to follow the guidelines of the legal process and complete a full-scale EIR prior to taking any revocation action.

It should be noted that within the same period, LCID itself became a center of conflict within the community concerning the best course of action to take in regard to DWR's revocation intention. When CCSLD initially formed, only one member of the LCID board was active in this community group. But as alternatives on what to do about the district's position on the dam safety issue came to be the central agenda item of LCID, its formerly sparsely-attended weekly board meetings were taking place before an overflow crowd, a crowd primarily composed of CCSLD members or sympathizers. Within a six-month period, the entire compositon of the board, as well as its manager, changed (either by resignation or removal); and, until the November, 1977, election, all LCID board members were also active, contributing CCSLD members. (The November election increased the LCID board from three to five persons, only one of whom was not a CCSLD member).

The period from May to August, 1977, was essentially quiet; newspaper coverage consisted only of articles updating the computer studies' findings. CCSLD held no meetings until late July when the EIR became available. As for the revocation hearing, efforts were made to gear-up the community for the August 11 EIR hearing which was well attended, filling a local school auditorium. The tone of the meeting was very hostile, with many prepared speeches being read concerning the damage the proposed action would do to the community; and many "on-the-spot" speeches questioning the integrity and motivation of DWR and its representatives were made. Of particular irritation to the citizens attending the meeting was an introductory statement by the DWR moderator that the topic under discussion for the evening was <u>not</u> how safe or unsafe the dam was, but what effects revocation would have on the local community. Those attending the hearing took this as an indication that DWR had no intention of changing its assessment of the dam's soundness (even though the completion of Phase I of their computer analysis was favorable) and that, despite local input, DWR would continue to take revocation actions.

Since the EIR hearing, CCSLD has again gone into a period of inactivity, awaiting the issuance of the revised EIR and DWR's final decision (due in early 1978). The community's continuing belief is that DWR will

again conclude that the dam is unsafe and the consequences of the dam's closure are of only secondary importance to the consequence of possible dam failure. CCSLD is still soliciting contributions (a barbecue was held for this purpose in December, 1977) to allow it to challenge DWR's undoubted revocation action in the coming months.

Four Patterns of Group Attention

From this investigation of group involvement, four different patterns have emerged, explaining the different collective action orientations of these responding groups and organizations.

Emergence groups. All of these new groups were deeply concerned with earthquake prediction and threat. For all but one of these groups (one of the two singular neighborhood meetings), the purpose of the groups, a key person or small cohesive core of acquaintances was responsible for the groups' formation. Although informal discussions with others were important in the emergence process, these discussions were limited primarily to only one type of discussion partner, usually a close friend or neighbor.

Expansion groups. The expanded groups and groups with a continuing interest in earthquake matters were usually those groups whose organizational goals were compatible with some sort of earthquake preparedness planning. The already-existent groups which demonstrated a greater involvement in earthquake topics (cells D, E, and G in Figure 1) frequently were oriented toward providing public services, either in institutional settings (hospitals, schools and libraries) or on a voluntary basis (scouting and community-oriented clubs).

Of those groups which displayed an increase in involvement, the expansion groups (cell E) experienced a salience of earthquake concerns which the unchanged groups (i.e., the stability groups, cells D and G) did not. Because of certain situational factors (e.g., their nearness to the Uplift and the presence of especially interested members), earthquake topics became particularly salient for a short period of time for the expansion-temporary

groups, causing them to develop new units to deal with earthquake-related concerns. The unchanged groups did not experience this agitated arousal of interest necessitating innovative group responses to their earthquake concerns. Instead, they incorporated their interests within their on-going structural frameworks.

For the more involved groups, earthquake prediction concerns were not an important factor in the initial motivation to sponsor a meeting. It is certain, however, that these groups were aware of earthquake predictions because a great majority of them discussed predictions during their meetings; but prediction and threat were not their major concerns. If the predictions actually indicated a coming quake, they wanted to be able to make their services available or wanted to be prepared to handle emergency situations. These groups were functioning within an emergency preparedness mode of planning (i.e., to handle problems resulting after a disaster).

Singular, stable groups. For the unchanged groups, however, two patterns led to singular meetings; one related to the organization's needs, and the other to the informal influences exerted on organizers temporarily arousing and activating their interests.

The unchanged and largely unresponsive groups (the stability-singular groups) were by far the groups most likely to have held meetings to fulfill some organizational need, not related to earthquakes at all. These organizational needs included being required to provide safety instructions to employees, having earthquake drills to fulfill legal obligations, entertaining speakers on topical subjects, or providing information to a small group or special committee within a larger group that would aid in developing an emergency plan. Frequently, these groups' goals were not compatible with earthquake concerns or earthquake planning. Earthquake concerns never attained any degree of salience for the groups themselves. As we have seen, such meetings

did not occur with respect to any specific significant events. Their occurrence was much more likely to be in response to intraorganizational dynamics.

But some of these groups did respond to earthquake predictions. Not only were many of these meetings motivated by prediction concerns, some attention was also directed toward prediction discussions during meetings (although a substantial proportion had no such discussions).

For these groups, some degree of concern about earthquake threat was obviously needed to get the organizations to respond even in this limited way. Because organizers often claimed responsibility for initiating these meetings, the manner in which they became concerned is of great importance. When organizers got their ideas from others to have these meetings, they were much more likely to have had earthquake discussions with many different discussion partners. In fact, their discussions were more broadly located than were those of the more involved groups' organizers. Perhaps it was the multiple informal channels through which earthquake ideas were received by the organizers that led to the belief that some minimal attention to earthquake matters (usually preparedness) be undertaken. Perhaps it was this arousal of an organizer's interest through informal discussions that accounts for the occurrence of these meetings in response to significant prediction events. Organizers, as extensions of their agitated or aroused networks (and, consequently, as members of the diffuse crowd attending to earthquake concerns) might be more motivated to arrange such meetings as quickly as possible in comparison with those arranging such meetings merely to meet a bi-annual requirement to have a safety meeting.

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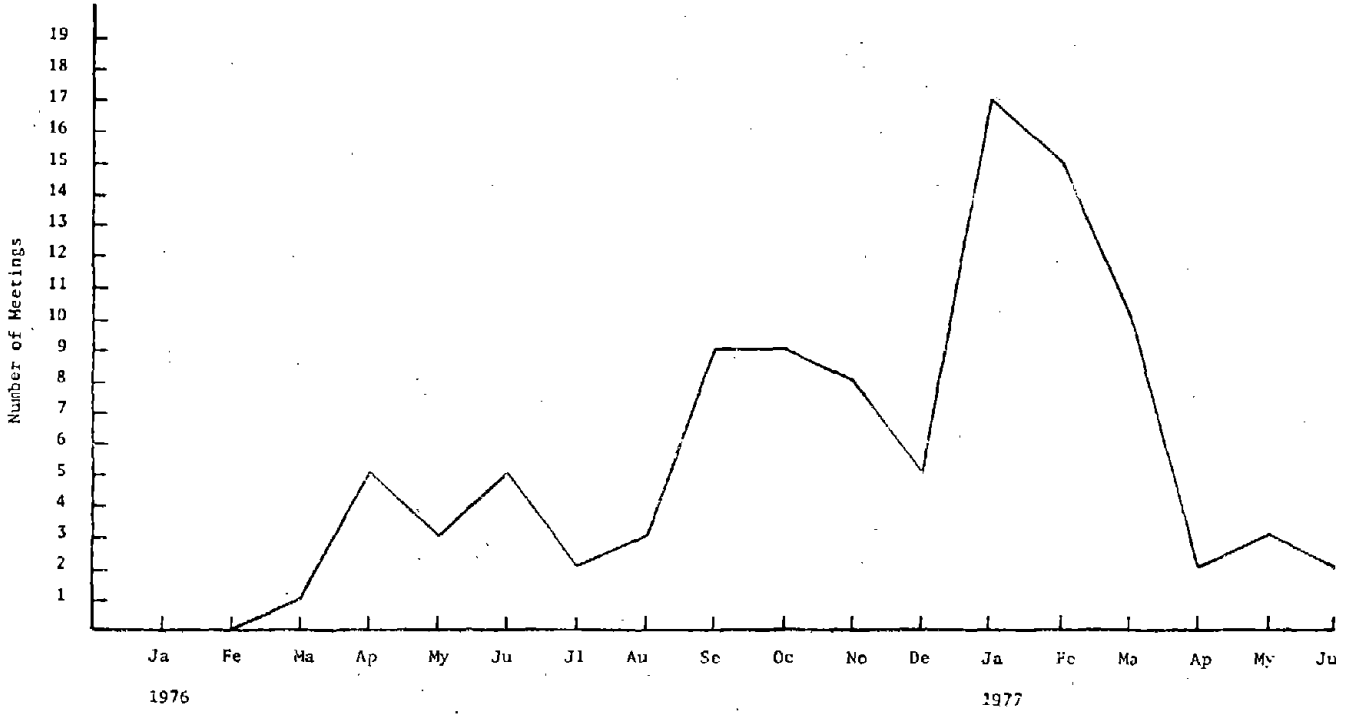
CHAPTER SIX

ORGANIZATIONAL LAG

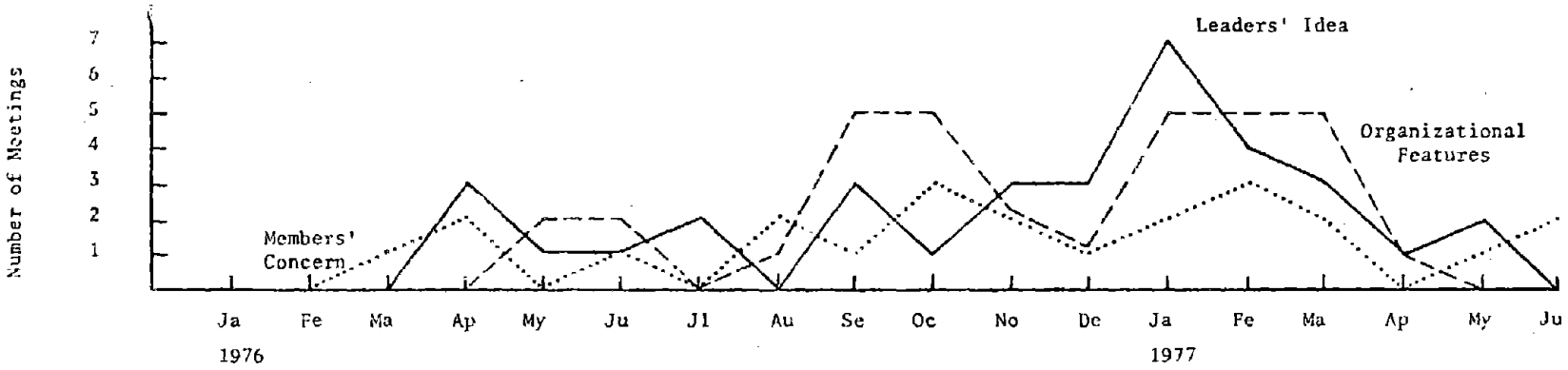
Since individual information seeking was so closely related to significant earthquake events and to the media's attention to earthquake topics, it was anticipated that the occurrence of group meetings on earthquake-related topics would also follow similar patterns. It would be reasonable to hypothesize that group attention would be sensitive to significant prediction events, especially when members' concerns were the motivation for these meetings. However, no such patterns were discernible in Figures 1 and 2. Neither all groups nor those that held meetings because of members' concerns about earthquake threat "fit" very well with the occurrence of significant earthquake events.

To investigate further this problem of "fit," it was hypothesized that groups which sought out speakers to address their members would more likely follow the patterns of individual information seeking than would groups that had to use their own resources to present such meetings. Perhaps if group leaders were concerned enough about earthquake matters to hold some type of group meeting, their concerns would be more consistent with those of the general public. Conversely, however, an argument could be made that groups which had their own resources such as a standing safety committee or an appointed emergency planning officer could mobilize those resources more quickly and respond to significant earthquake events more quickly than groups that had to solicit outside help. Neither hypothesis was supported. Whether the group was essentially an information-seeking group or an information-



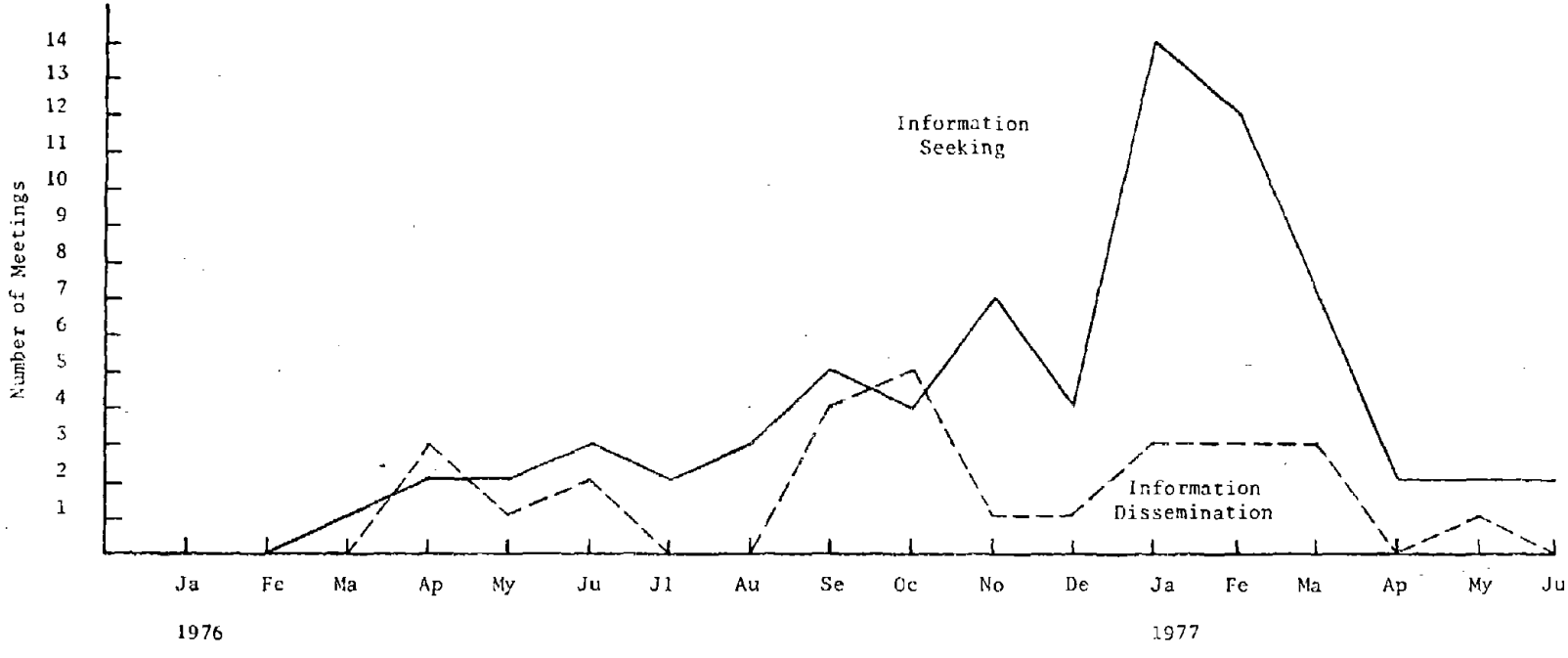
TOTAL NUMBER OF EARTHQUAKE MEETINGS BY MONTH

FIGURE 1



MONTHLY DISTRIBUTIONS OF MEETINGS BY SOURCE OF MOTIVATION FOR SPONSORING A MEETING

FIGURE 2



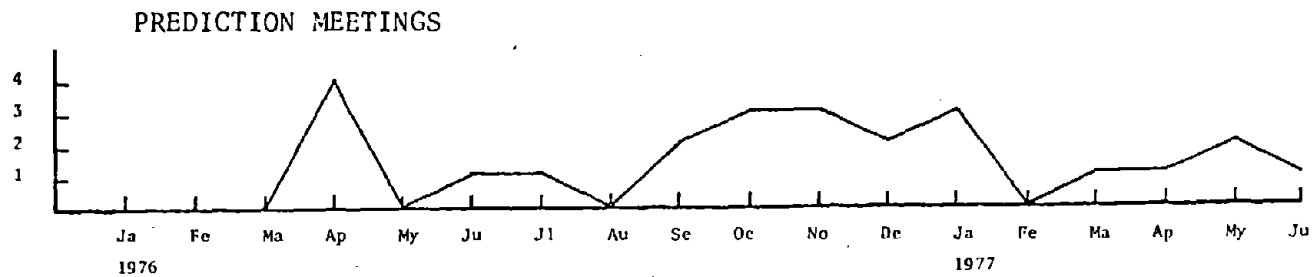
MONTHLY DISTRIBUTIONS: INFORMATION-SEEKING AND INFORMATION-DISSEMINATION MEETINGS

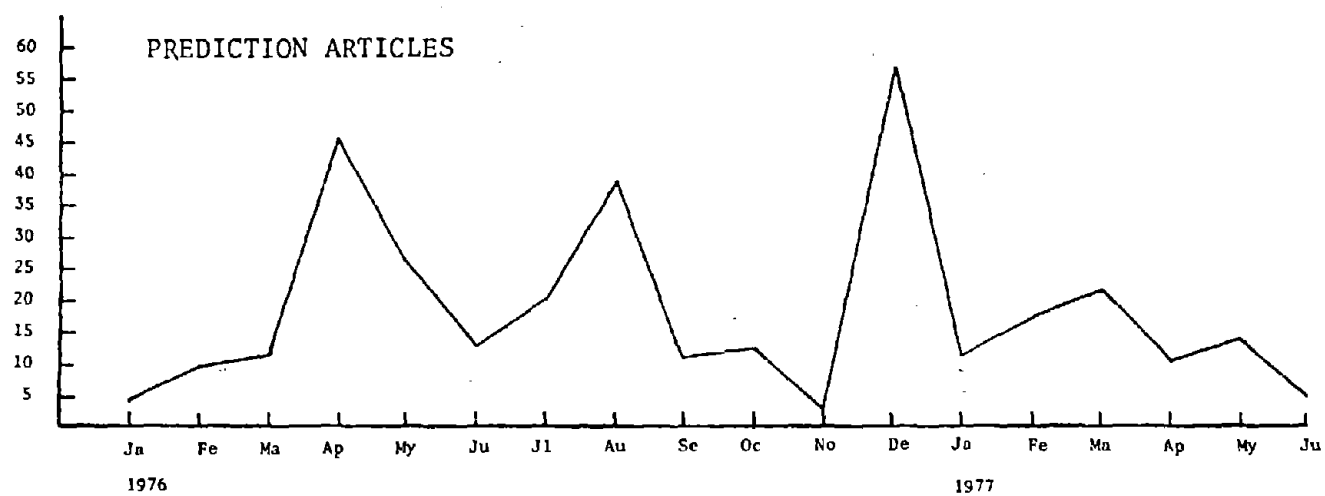
FIGURE 3

dissemination group did not seem to be particularly useful in predicting a closeness of fit to significant events (Figure 3).

Although group meetings did not seem to fit well with actual events, they may have been more responsive to media treatments of earthquake events, as were some of the responses of diffuse crowds. It was hypothesized that meetings which presented scientific or prediction information would occur during those periods when scientific media articles peaked. These meetings should fit better than meetings at which preparedness information was the primary type of information presented. Figure 4 and 5 indicate that neither type of meeting corresponded to the media's presentation of prediction events. Nor did preparedness meetings seem to follow the occurrence of a peaking in the media's presentation of articles (Figure 6).

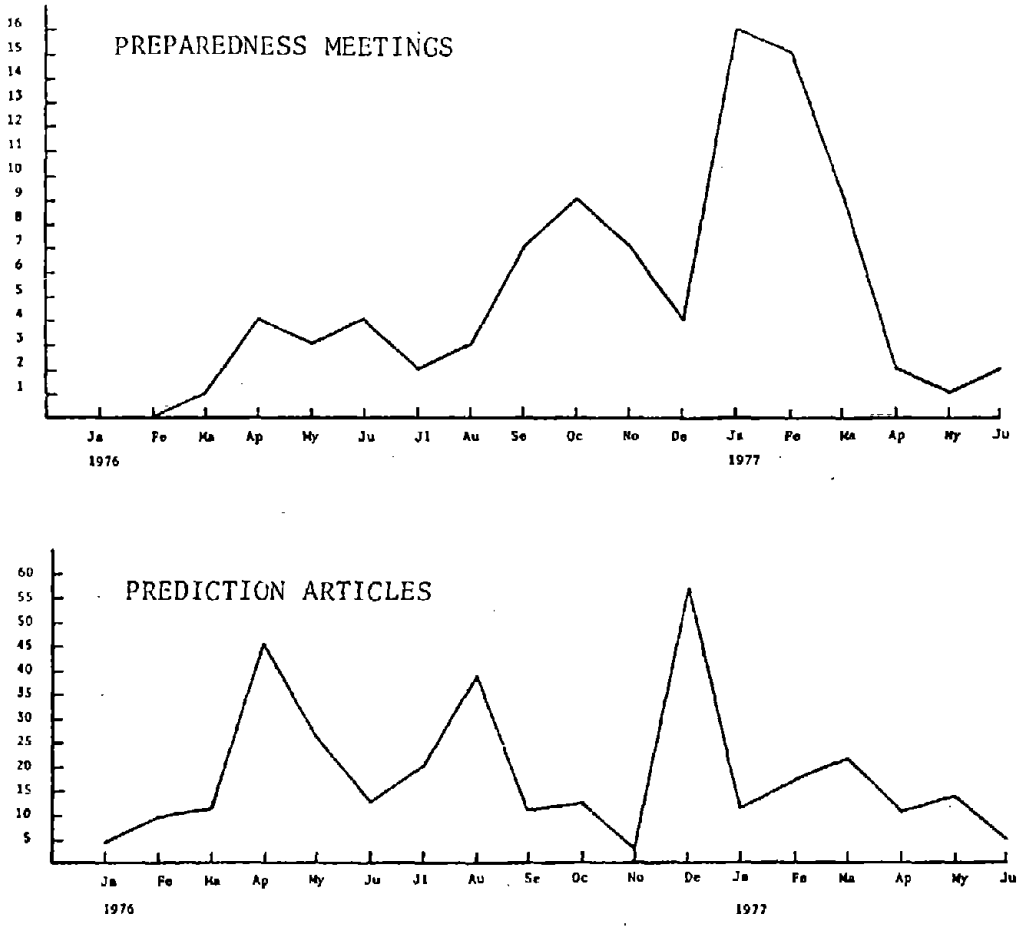
Although it does not seem that group meeting occurrences were related in any temporal manner to significant events, two pieces of information call this preliminary conclusion into question. First, it has been found that earthquake predictions were cited as the motivation for sponsoring a meeting in about 45 percent of the sampled groups for which information was available (20 out of 67); and that earthquake predictions were discussed in almost 62 percent of the known sampled groups (63 out of 102). Predictions, then, did seem to be important group concerns for these meetings' occurrence. Second, one of the most popular sources of earthquake speakers, the Civil Defense office, had received no requests for speakers on earthquake topics until March, 1976. There had been no requests at all for at least the eight months preceding March. Also prior to March, groups and organizations had requested only very modest levels of earthquake information materials from the Civil Defense office. Clearly, earthquake events that took place in April, 1976, did have some impact in arousing group interests after a period of quiesence.





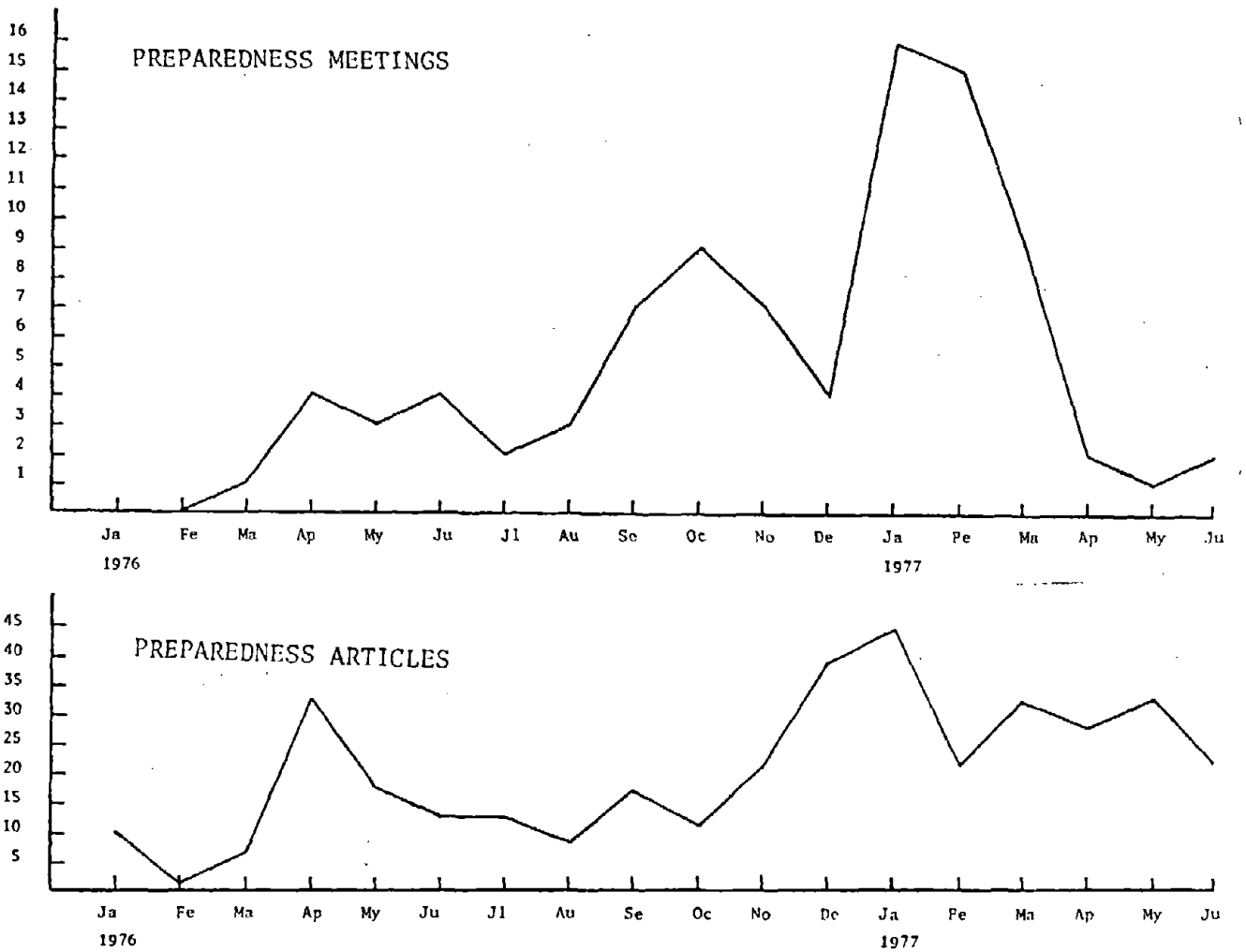
MONTHLY DISTRIBUTIONS: PREDICTION MEETINGS AND PREDICTION ARTICLES

FIGURE 4



MONTHLY DISTRIBUTIONS: PREPAREDNESS MEETINGS AND PREDICTION ARTICLES

FIGURE 5



MONTHLY DISTRIBUTIONS: PREPAREDNESS MEETINGS AND PREPAREDNESS ARTICLES

FIGURE 6

Prediction events were, then, important factors both in the motivation for groups' attention and as discussion topics during meetings. The problem here is to explain why group mobilization did not "fit" better with significant earthquake events, given the importance of prediction concerns within the group context. What factors were muting or modifying the effects of these events, making the mobilization of formal collectivities appear to be unrelated to significant events? For purposes of analysis we assume that groups do respond to events, but with an organizational lag that obscures the relationship.

By hypothesizing that groups would respond to significant earthquake events, an "open systems" theory is being invoked as an explanatory model. Organizational theorists have begun to stress the importance of placing organizational processes and adaptations within an open systems context; that is, the interchange between an organization and its environment is an essential factor in the system's viability (Buckley, 1967). Katz and Kahn (1966) state that such an approach emphasizes the close relationship between a structure and its supporting environment, including its relationship with its human components.

Although such a model is quite attractive for the purposes of this study because it takes into account the effects of environmental factors on group processes, it obviously cannot be used without reference to the factors, both organizational and situational, which impair the ability of the group to respond quickly to environmental stimuli. These inhibiting factors must be taken into consideration for any explanation of the "organizational lag" phenomenon.

Three non-mutually exclusive factors that promote organizational lag have been identified, namely, the diffusion of earthquake meeting ideas, resource scarcity, and the primacy of organizational planning. Each of these

factors will be discussed separately although they often appeared in combination in some of the sample groups.

The Diffusion of Earthquake Meeting Ideas

Although information was missing for some groups in the sample, at least one out of every four (n = 35) meeting organizers had attended an earlier earthquake meeting which motivated him or her to set up a similar presentation for another group in which he or she was a member, and almost one out of four (n = 33) stated that other earthquake meetings had taken place as a result of the one included in the sample.

In many of these instances, a group member constituted the link between the occurrence of an earthquake meeting in two different types of groups. For example, one woman working for the state of California attended a mandatory lecture for employees on disaster preparedness which included an earthquake component. She was so impressed with the suggestions on earthquake preparedness that she had the homeowners' association in her condominium complex set up an evening presentation on the topic. In another instance, a young woman working for the telephone company attended a required meeting on earthquake safety procedures. Using some of the information from that meeting and her own research, she presented an earthquake lecture to a special interest club of which she was a member. Another telephone company employee, who had also attended a required earthquake safety lecture, presented a program on earthquake preparedness to the PTA of which he was president.

In other cases, however, the structure of the organizations themselves promoted the proliferation of earthquake meetings. For example, four presentations stemmed from a nutritional program director's concern about earthquake danger for senior citizens. In November, 1976, the program director became

aware of the earthquake threat and its possible effects on "her seniors" by overhearing conversations about predictions at the center she managed. Although the seniors who used the center did not seem overly anxious about the media reports that earthquakes were anticipated in the near future, the manager began to worry how these people would react if an earthquake occurred when they were alone. She scheduled a luncheon presentation to help the seniors prepare both their homes and themselves for such an event. Because she was pleased with the presentation, she suggested that other site managers of nutritional programs in the San Fernando Valley, who were under her direction, sponsor similar presentations. Subsequently, three additional meetings were held, one each in January, February, and March, 1977.

Although the organizational structure within this program promoted multiple earthquake meetings, it was still a member's interest which stimulated organizational interest in earthquake matters. Networks in which groups rather than individuals constitute the potential interactive agents were not found to be important in providing the motivation for sponsoring presentations. One reason for this may be that there are few organizational linkages that are oriented toward physically safeguarding groups. Governmental "watchdog" agencies establish minimum safety requirements for certain types of groups, such as holding disaster drills once a year. Emergency services such as police and fire departments are assumed to be able to handle disaster situations when they occur.

Also during the study period, there were no suggestions from either the government or scientists involved in the prediction field that extraordinary measures would be needed by civilian groups. There were no suggestions that civilian groups, either formal or informal, should consider any type of interorganizational planning. For these reasons, intergroup communication regarding earthquake topics was minimal.

The diffusion of earthquake information and meeting ideas through members' group affiliations was quite important in determining when such meetings might occur. For example, the initial senior citizens' meeting described above took place during the height of the rumoring episodes and was specifically related to members' concerns, as perceived by the site manager. But the follow-up meetings occurred during the first quarter of the next year, seemingly unrelated to any major prediction or earthquake events.

As ideas were diffused through extended groups or across groups they seemed to become dissociated from the initial motivation for having an earthquake meeting. In some instances this dissociation between motivation for the initial and subsequent meetings was very real. For example, the telephone company employee who later presented a preparedness talk to her club used the earthquake topic because it was "handy" and had received quite a bit of media coverage. It was a "perfect" topic on which she could prepare an already-scheduled talk.

In many cases, though, the initial meeting triggered some members' concern about friends, acquaintances, or co-workers in other parts of their networks who might also find such information useful. Frequently these disseminators reported that they themselves were worried about a coming quake and thought that everybody should know more about earthquake preparedness. The only type of meeting resulting from this method of dissemination was on earthquake preparedness and planning.

Whatever the reasons for disseminating the idea to have an earthquake meeting, these subsequent meetings frequently resulted from earlier meetings that were more closely related to significant events.

Resource Scarcity

"Resource scarcity" refers to the general lack of agencies or organizations in the community that could or would provide speakers on earthquake topics to civilian groups. Information-seeking attempts by groups were quite often tied to the ability of the seeker to find an acceptable avenue through which to locate a speaker. For most groups that had to use external resources this search was especially frustrating. Few avenues were available to civilian groups, and none of the resource groups advertised their speakers' services.

The major resource for preparedness in the county was the Civil Defense office. Sheriff's departments, police stations, and fire departments often referred callers to the Civil Defense office when they received requests for a speaker on earthquake topics. The major portion of these requests was channeled to the Los Angeles City's Civil Defense office which had only one full-time officer, a part-time assistant, and a secretary. Because city-related emergency planning took priority, providing speakers to requesting groups had to "fit into" the staff members' schedules. For this reason, groups would often call and request a speaker but have to wait until the meeting could coincide with "free time" in a staff member's schedule. Also, emergencies requiring the presence of the Civil Defense officer occa - sionally delayed meetings at the last minute. Such unavoidable delays often irritated the requesting group's members, sometimes to the point of not rescheduling an earthquake meeting. In this way, meeting dates sometimes followed the requesting date by a month or more, and sometimes the meetings were postponed indefinitely.

Organizational lag, then, did not result solely from the diffusion of meeting ideas across groups but also from the need to use and coordinate with already over-worked public resources.

The major source of scientific or prediction speakers in southern California was Caltech. When the Caltech Speakers' Bureau was contacted, calls were closely screened to determine the type of group requesting a speaker and the size of the anticipated audience. Since Caltech did not consider a service orientation to be one of its fundamental purposes, the Speakers' Bureau frequently denied requests from civilian groups and organizations that couldn't guarantee an attendance of at least fifty to a hundred persons. This criterion excluded such groups as a local Board of Realtors, a library in Altadena, a group of mental health workers, and several teachers trying to get speakers for their classes.

According to a spokesperson for the Speakers' Bureau, four to twelve requests for speakers were received each month, seventy-five percent of the callers specifically requesting speakers on earthquake topics. If a caller had no specific topic in mind, earthquakes were frequently suggested by the Bureau because the researchers in the Seismology Laboratory had well organized, interesting presentations. Most people responded positively to this suggestion, especially during periods when earthquakes were "topical" in the media.

If the requesting group did meet the attendance criterion, their meeting still had to take place at a time convenient for the scientist in the laboratory (i.e., with respect to his or her teaching and research schedules). Again, the scarcity of sources for scientific information for groups also resulted in a lag phenomenon. An overworked, voluntary resource provided speakers only when the organization's primary goals and tasks were not interrupted.

In the case of Caltech, an extra filtering process had been incorporated in an attempt not to overload the system but to reach as many people as possible. This filtering process had two consequences. First, it increased the possibility of lag. The group that did not qualify had to continue looking for another scientific resource which could provide a speaker for their meeting. Second, it also increased the likelihood that smaller groups would not be able to satisfy their aroused earthquake interests. They would not be able to hold a meeting that included scientific information. It was these smaller groups, frequently, that did not have the intra-organizational resources to sponsor their own meetings and were reliant on seeking an "expert" from outside of the group. This filtering mechanism then actually diminished the number of attending groups.

The Primacy of Organizational Planning

Organizations frequently plan their event or meeting calendars well in advance to facilitate the group's functioning. This penchant for future planning often resulted in earthquake meetings that were held months after their original inception. For example, the program chairwoman of an elementary school PTA in the San Fernando Valley reported that she laid out her monthly program schedule in late October, 1976. At that time, she said, earthquake predictions were in the news and "valley people were remembering the '71 quake." But because there were "traditional"programs (Thanksgiving plays in November and Christmas pageants in December) and required school events (a back-to-school night and a musical program), she was unable to schedule the earthquake program until early 1977. The program, a well advertised and attended meeting which included a Spanish translator, finally took place in March, 1977, five months after the idea for the meeting initially arose.

This example also points out an important temporal factor that affected the occurrence of earthquake meetings--the Christmas holidays. As is evident in Figure 1, the total number of meetings declined drastically in December, 1976. Even for those that were not motivated by specific prediction concerns, the drop was especially dramatic (Chapter 5, Figure 2).

It is untenable to assume that this decline in earthquake meetings in December was due to a decline in earthquake interest. Certainly, individual information seeking reached its highest peak in six months in December (Chapter 1, Figure 2), coinciding with the Minturn prediction. It is more likely that traditional organizational patterns relating to the holidays pre-empted earthquake meetings during this time. In the latter half of December, schools are in recess. Many people also take vacations during this time of the year causing employers to minimize their planning of regular safety meetings. Clubs frequently plan parties or festivities during their December meetings. Churches and religious groups are deeply involved in traditional programs and services at this time of year.

In this instance, the holiday season provided a traditional set of organizational activities that took priority over the more recent concern of those organizations about earthquake topics. Although earthquake threat and prediction concerns were still important to the general public at this time, the concerns within formal groups and organizations had been pre-empted. The importance of this situational contingency should not be overlooked in an analysis of the factors influencing group response.

But there is also a possibility that what appears to be a decline in group interest in December may also be partly attributable to a scarcity of speakers. Vacations and holidays of those who make their services available for preparedness or scientific programs may have resulted in lowered ability to meet group requests during the Christmas season, causing such requests

to be filled over the next few months. The dramatic rise in earthquake meetings during the first three months in 1977, then, may have resulted from both the renewed availability of resources and the groups' ability to "fit in" earthquake topics at a time when they weren't in competition with more traditional or salient concerns.

Although the occurrence of group meetings does not appear, upon first glance, to be related to significant earthquake events, we have tried to demonstrate that the factors producing organizational lag account for much of this discrepancy. Because meeting ideas diffused through organizations and between groups, because the scarcity of resources (i.e., speakers) often resulted in "fitting" meetings into the speakers' already overcrowded schedules, and because organizations were oriented toward future planning, earthquake meetings were often delayed and dissociated from the events that initially gave rise to the motivation for sponsoring meetings on earthquake topics.

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CHAPTER SEVEN

LOS ANGELES BUILDING AND SAFETY ORDINANCE: A CASE STUDY

The third case study involves the initiation of hazard-mitigation legislation, specifically the Seismic Ordinance, in the City of Los Angeles. Four agencies were involved in bringing out this Ordinance. (1) The Department of Building and Safety was actually responsible for writing the draft of the Ordinance. The person most responsible in this department was R. J. Williams, the General Manager. Just under Williams was F. V. Kroeger of the Conservation Bureau of the Department of Building and Safety. These two men signed their names to all official correspondence pertaining to the Ordinance.

(2) The Building and Safety Commission was a Mayor-appointed body of five persons, primarily citizens involved in community affairs, geologists, social scientists, etc., whose task was to listen to public viewpoints. After such views were aired (usually at a public hearing), the commissioners made recommendations to the Department of Building and Safety so that the Ordinance could be revised. The Commissioners were Jerry P. Cremins, President (no longer Commissioner); Rachel Gulliver Dunne, Vice-President (a geologist); Shirley Jean Better (an instructor of sociology); Vern L. Bullough; and Toshikauzu Terasawa.

(3) The Building and Safety Committee of the Los Angeles City Council and (4) The City Council itself complete the roster.

Los Angeles County officials had been aware of the problem with existing parapets on buildings constructed before 1934 ever since the Long Beach earthquake. Many parapets collapsed in that 1933 earthquake. In the mid or late 1950's,

the City of Los Angeles passed a parapet ordinance which required owners to remove or reinforce those parapets that were declared unsafe. By now, most of the pre-1934 buildings' parapets have been corrected.

After the 1933 earthquake, many private citizens and public officials also became aware of the hazards posed by the pre-1934 unreinforced masonry buildings. Many of them had collapsed in the Long Beach quake, and many more in other parts of the County were vulnerable in case of another earthquake. Pre-1934 masonry structures were often built of "a low strength clay brick, with lime-mortar joints which deteriorate in strength with age, no reinforcing steel, and either no lateral connection or very inadequate connections between the walls and roof and floors of the buildings."[1] Masonry structures built after the 1933 legislation were required to have floor and ceiling joists structurally fastened to the walls. In the event of an earthquake, even if parts of the walls were to crack and break away, total collapse would be less likely.

The 1971 San Fernando Valley earthquake resulted in some of the pre-1934 unreinforced masonry buildings collapsing. After the 1971 quake and because of it, a County Task Force determined that about 14,000 structures of unreinforced masonry existed in Los Angeles.[2] It was the two earthquakes of 1933 and 1971 that brought to light the need for the City of Los Angeles to adopt some kind of "workable" Seismic Safety Ordinance that would make buildings constructed prior to 1934 comply with new construction standards. The series of events described below cover the transformations and modifications that transpired from the initial phase of the Ordinance to where it presently stands.

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[1] Carl B. Johnson, "Structural Engineering," in Special Subcommittee of the Joint Committee on Seismic Safety, California Legislature, The San Fernando Earthquake of February 9, 1971 and Public Policy, (Sacramento: 1972), p. 42.

[2] The discussion of the above was based on information received from a field interview with Building and Safety Commissioner Rachel Dunne on April 4, 1978.

On February 22, 1973, then Councilman Thomas Bradley and Councilwoman Pat Russell, in a motion to the City Council, stated that "the City of Los Angeles must take steps to adopt a systematic long-term program to reduce the risk to lives by repairing such buildings, phasing them out, or converting them to low-density uses." This was the first of many steps in the initiation process. Although some kind of Seismic Safety Ordinance was called for, Los Angeles heard nothing more about building safety for almost two years. There is no exact reason given as to why Los Angeles did not take action in processing a building safety ordinance after Bradley and Russell's original motion. According to one Building and Safety Commissioner, the matter was simply shelved because some people (probably councilmen) realized the socioeconomic costs involved.[3]

It was not until October of 1974 that the second step in the process occurred; Councilmen Snyder and Lorenzen presented a motion to the City Council regarding building safety. However, this motion was very different from Bradley's original idea. It stated that an ordinance should be developed requiring all unreinforced masonry buildings used as theaters to be brought up to current structural, plumbing, and electrical codes, or the Council should have them closed down. Bradley's motion applied to <u>all</u> such pre-1934 buildings, not just theaters. One reason given for the later focus on motion picture theaters was that building safety was not the primary motivating concern; rather the action was actually directed against a specific movie house that showed "X-rated" movies. It was said that one councilman wanted to close down this theater in particular and thought this could be done if he pointed out that the building was unsafe for public gatherings.[4]

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[3] Information from field interview with Commissioner Rachel Dunne, April 4, 1978.

[4] Information from field interview with Commissioner Dunne, October 13, 1976.

The Building and Safety Committee of the Los Angeles City Council, in response to the Snyder-Lorenzen motion, requested that the Department of Building and Safety study the proposal and develop a plan of procedure (primarily in the form of an ordinance) within ninety days. On January 15, 1975, the first draft of the proposed ordinance was unveiled. R. J. Williams, General Manager of the Department of Building and Safety, and the City Attorney presented the newly drafted ordinance to the Building and Safety Committee of the City Council. This ordinance was only applicable to motion picture buildings. Its key features included:

(1) Focusing on only one hundred pre-1934 unreinforced masonry buildings used as theaters,
(2) Having the owner repair or demolish the building within one and one-half years of notification, and
(3) Having the one hundred theaters inspected within one year by certified building inspectors.

The Department of Building and Safety determined that these pre-1934 buildings were particularly dangerous in an emergency, because people were in crowded conditions, in dark unfamiliar surroundings, and their attention would be on the movie and not on what was going on around them. The Department of Building and Safety stated further that unreinforced masonry buildings were highly vulnerable to collapse in the event of an earthquake.

The first draft of the Ordinance was not a lengthy document; in fact, it was very brief and got directly to the point; i.e., it would determine which theaters were vulnerable and the owners could have six months to one and one-half years to complete restoration. The proposed Ordinance was then turned over to the Building and Safety Commission to initiate a public hearing at which pro and con viewpoints could be heard. The public hearing was announced for February 18, 1975.

The First Public Hearing: February 18 and March 18, 1975

At the first hearing, public comments were received both in letters and

personal appearances. About a hundred persons attended, presenting their views as individuals and organizational representatives to the Building and Safety Commissioners.

Some pro arguments. The Structural Engineers Association of Southern California (SEASC) was strongly in favor of the Ordinance and felt it was "an important step forward in protecting a portion of our citizens in the event of an earthquake" (from a letter to the Building and Safety Commission, February 19, 1975.) At that time the SEASC joined forces with three other leaders in building design--the American Society of Civil Engineers, Los Angeles Chapter; the American Institute of Architects, Southern California chapter; and the Earthquake Engineering Research Institute--and introduced legislation in the State Assembly requiring that all structures built prior to the Riley Act of 1933 be examined and that those found hazardous be repaired or demolished.[5]

Some con arguments. Theater owners were vehement in their opposition to the Ordinance. The Association of Motion Pictures and Television's position was that the Ordinance would cause them severe economic hardship. This organization was against any action that might result in theaters having to close their operations. The Association accused the Building and Safety Commission of being very discriminatory against the theaters. They charged that the theaters named were just randomly chosen and that evidence that the theaters were unsafe did not exist in reality. They wanted actual proof that "particular theaters" were, in fact, structurally unsafe.

The Los Angeles Chamber of Commerce wrote to the Commission supporting the Motion Picture industry. On behalf of the theater owners, the Chamber of Commerce stated that the movie industry did not have financial resources necessary to rebuild or refurbish the movie houses. The Chamber made the point that the

[5]This was the only pro argument given at the hearing.

theaters were being singled out by the proposed ordinance. Therefore, the Chamber of Commerce urged the Building and Safety Commission to consider the socioeconomic consequences if the Ordinance was adopted.

The California Society of Theatre Historians requested that the Commission preserve the historical and architectural quality in some of the buildings. This group was not against the Ordinance per se; it was just concerned that none of the historical or cultural features of the structures should be destroyed.

Conclusions of the Commissioners from the hearings. At the end of the public hearing, which was continued in mid-March, the Commissioners recommended that the proposed Ordinance not be adopted for various reasons. They agreed that the theater owners had, in fact, been discriminated against. To correct this error, the Commissioners recommended that the Ordinance be drafted again by the Department of Building and Safety (similar in all respects to the previously considered proposal) making it applicable to all assembly buildings. The Commissioners also recommended that a copy of the tentative list of affected theaters be sent to the Cultural Heritage Board in order for buildings of unique and historical significance to be identified at an early stage so that steps could be developed for their preservation. At this time the Building and Safety Commission did not formally acknowledge that the theater owners would be faced with an economic burden--this was said at a later date.

R. J. Williams reviewed the Commissioners' comments. In April, 1975, he wrote to the City Council's Building and Safety Committee, outlining the main points of the hearings and the Commissioner's recommendations. Williams also pointed out why he disagreed with the Commissioners. He stated that:

> The hazardous conditions of these older buildings built of masonry construction prior to the first code requirement for seismic design cannot be overemphasized. A major earthquake in the Los Angeles area would probably cause the highest incidence of casualties of any foreseeable disaster. The failure of these non-seismically designed masonry buildings in the Long Beach earthquake of 1933 was the major factor in causing

> approximately 120 casualties. Structural failure in this type of a building is not an imagined hazard, but it is a real one as borne out by records of past earthquakes.

Williams' position was that the motion picture theaters should be corrected first before any other public assembly buildings because they were the most hazardous. Williams further stated that "out of approximately 165 theaters in the city, 43 would be affected." Therefore, he believed that priority should be given to these structures, especially because of the darkened conditions they require. Although Williams favored the Ordinance in its original form which applied to theaters only, he complied with some of the Commissioners' recommendations. Around December, 1975, a revised Ordinance was drafted.[6] This revised version was now applicable to all public assembly buildings and not just theaters. The total number of buildings now involved was 300, which was an increase of 200 structures. Other than this broadening of scope, the Ordinance was similar to its first draft. No provision for historical preservation of designated buildings was indicated. The Building and Safety Commission again scheduled a public hearing concerning the revised Ordinance.

The Second Public Hearing: January 27, 1976.

Pro and con arguments about the Ordinance were presented to the Commissioners at this hearing, both in letters and personal appearances. Approximately one hundred persons attended this hearing.

Some pro arguments. George Housner, Professor of Civil Engineering at Caltech, in a personal appearance, strongly recommended that Los Angeles endorse and adopt the Ordinance. Housner related the need for the current Ordinance to the 1971 San Fernando earthquake. He stated that "investigation of the San Fernando earthquake showed that the greatest hazard to the public during an earthquake is presented by the old unreinforced masonry buildings that were

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[6]The ordinance was not revised until December because the Department of Building and Safety had other priorities on their agenda. (Information from a field interview with Commissioner Dunne, April 4, 1978.)

not designed to resist earthquake forces. Such buildings will collapse if subjected to strong ground shaking with consequent death and injury to the occupants" (statement read to Commission at the hearing). Housner argued further for the necessity of accepting the Ordinance on the basis that Los Angeles could be severely damaged with another major movement of the San Andreas fault and that such a movement is expected within the next hundred years. He also pointed out that there are many other faults in the Los Angeles area having an equal potential for an earthquake.

The Structural Engineers Association of Southern California fully endorsed the Ordinance. They maintained that assembly buildings are the most hazardous type of unreinforced structure. But they favored development of a plan to cover the entire spectrum of hazardous buildings, and not only those used for assembly purposes.

> We strongly urge that a plan be...developed to cover the entire spectrum of hazardous buildings. We strongly urge the study of Subdivision 80 of the Long Beach Municipal Code as a guide....
> We will have one or more representatives of our association at the January 27 public hearing on the proposed ordinance.
> (letter to the Board of Building and Safety Commissioners from Ben Schmid, president, SEASC, January 23, 1976).

Ben Schmid personally attended the hearing, where he advocated giving top priority to the repair of unreinforced masonry assembly buildings. He expressed the view that the elimination of structural hazards is more important than the cost of repairing the buildings. He stated further that there have been several instances when fees have been reduced for the rehabilitation of older buildings, especially when there was special architectural or cultural value given to the structure. Schmid also claimed that there are several ways funding can be obtained for churches, but he did not say what they were.

John Kariotis, Chairman of the Seismology Committee of SEASC, addressed himself to structural problems at the hearing. He stated that the criteria as established by the Department of Building and Safety (that assembly buildings

are most hazardous) were consistent with the position of SEASC. He did agree that the decision as to which buildings should be repaired is a political decision and all factors must be considered (from minutes of January 27 hearing).

The State Seismic Safety Commission was also personally represented at this hearing. They saw the Ordinance as a positive step forward with respect to building safety. Furthermore, they believed that the proposed code was very lenient, and they maintained that the life-saving factor greatly outweighed any consideration of socioeconomic factors.

Some con arguments. The major complaint of the National Association of Theater Owners of California was that the Ordinance was discriminatory because it failed to establish criteria for determining what constituted a hazardous building. The representative at the hearing expressed the opinion that the theater industry as a whole is pro-public safety and has worked very hard to eliminate hazards in the movie houses. The Director of Construction for Pacific Theaters also spoke in favor of establishing priorities among the pre-1934 buildings (i.e., designating those which are most hazardous) rather than applying the Ordinance to all of them. He also urged that consideration be given to the legal and fiscal responsibilities for correction of the buildings.

The attorney for Pacific Theaters reiterated the opinion that the Ordinance was discriminatory because it applied to only one type of building. She favored the inclusion of department stores. She also pointed out that repairing the theaters' walls, wiring, plumbing, heating, etc., would place a severe economic burden on the owners. Therefore, she felt, if there were to be an Ordinance at all, it should be much narrower in its focus. Only the structural element was necessary for earthquake safety and not the wiring, plumbing, and related features.

Other theater representatives, as well as the Chamber of Commerce, agreed that the Ordinance would cause economic hardship for theater owners. The

Chamber of Commerce spokesman stated that if any refurbishing needed to be done to unreinforced buildings, it should only apply to the structural element (letter, dated January 15, 1976, to the Building and Safety Commission). The position here was exactly the same as that taken by Pacific Theaters. The State Historical Advisory Board also addressed the Building and Safety Commission in both a letter and personal appearance. The Board advocated that the Ordinance should definitely include a provision which would preserve the historical architectural appearance of certain buildings and that such a qualified "historic structure" should be governed by alternative regulations.

Commissioners' concerns and recommendations. (1) The economic aspect: During the hearing, Commissioner Better stated that consideration must be given to the life style of the community that would be most affected by this Ordinance. She suggested that consideration should be given to loan guarantees for the owners of these buildings.

Commissioner Dunne asked whether the State Seismic Safety Commission (SSC) had discussed the social and economic hardships that the owners would be faced with in order to comply with the Ordinance. Commissioner Bullough stated that he felt the SSC should look into this matter and try to obtain some kind of funding program. At this time, the representative of the SSC said that they had the authority to sponsor state legislation. Commissioner Dunne said that since cities will probably need state support for such funding programs, the SSC should study this matter.

(2) The structural aspect. During the hearing, various comments were made about the appropriateness of provisions of the Ordinance which would require the building owners to bring plumbing, wiring, heating, and structural elements up to code. After the hearing, the Commissioners concurred that this was too strict. It would force an unnecessary cost upon the building owners. According to the Commission, only structural reinforcements were absolutely necessary.

The Department of Building and Safety favored requiring that all building aspects be brought up to current safety standards. The Commissioners now concluded that if the Ordinance were relaxed, and applied only to the structural element, the cost would be much less. It was recommended to R. J. Williams that the Ordinance be revised to specify only structural elements, in spite of his preferences.

(3) The architectural element. The Commissioners also concerned themselves with the request from the cultural historians who wanted to preserve the original architecture of many of these older buildings. The Commissioners agreed that some provisions for historical preservation of designated structures should be included in the Ordinance.

Shortly after the hearing of January 27, the Commissioners met twice in order to come to grips with the issues brought up at the hearing. It was during these two meetings that the actual recommendations were made. On February 3, 1976, serious considerations were given to the socioeconomic concerns of the building owners. They decided that the 300 buildings affected in the Ordinance were, in many instances, in low-income or "red lined" areas of the city. A letter to Mayor Bradley informing him of the Building and Safety Commission's considerations was sent to his office on February 10. In the letter the Commissioners said:

> Many of the buildings affected by hazard abatement programs will eventually have to be demolished because the owners are not able to pay for the cost of repairs. The net result would be that many vital economic and social services will be eliminated in the older neighborhoods and whole communities would soon deteriorate to the point where they are no longer viable.
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> The Board for the past several years has asked the Mayor and the City Council to explore avenues of funding for those owners who cannot pay for repairs. These explorations have shown that there is only limited funding available for residential repairs. So far, no federal or state funding is available for repairs to commercial buildings. Private funding is usually not available in older neighborhoods or to those persons who need it the most. The solution of this problem is not easy. The Board is well aware that buildings must be safe. The Board has always vigorously supported hazard abatement ordinances, yet serious thought must be given to the means of repairing these older buildings. Since established funding practices and policies are hard to change, a different solution

> must be found. One idea discussed and accepted by the Board as a good solution is that a program of tax incentives be established to encourage owners to make repairs. In the present climate of high property taxes, an owner would be more likely to repair a building if he knew that there was some property tax advantage.
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> Since the field of property taxation is preempted by the State, the Board of Building and Safety commissioners respectfully requests the Honorable Mayor to initiate, though his State legislative program, a tax rebate or incentive system for owners of buildings which have been ordered repaired by the City (Department of Building and Safety) under any hazard abatement ordinance.
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> (Excerpts from a letter to Mayor Bradley from the Building and Safety Commission. The letter was addressed to the attention of Anne Howell, Executive Assistant, February 10, 1976.)

These three recommendations were the ones that the Building and Safety Commission deemed most important and recommended for inclusion in a revised Ordinance. However, when the Ordinance was revised after the second public hearing by the Department of Building and Safety, it reflected only the recommendation to require only structural upgrading. In fact, it was basically the same as the previous revised Ordinance with two exceptions. The first one was based on structural recommendations from the SEASC. This change would allow vertical load-carrying frames to be installed "to relieve superimposed vertical loads adjacent to unreinforced masonry walls" (letter to the Building and Safety Commission from R. J. Williams, March 16, 1976). The second change was a relaxation of the requirements in all non-structural areas, i.e., reference to codes other than structural ones was now deleted. The Ordinance did not contain any provisions for funding or for the historical preservation of designated structures. The Ordinance further stated that the owners would have to start repairing their buildings within one year from notification, and would have to complete such repairs within a maximum of two years. When the Commissioners received the revised Ordinance, they agreed it was still necessary to obtain further public viewpoints before turning it over to the City Council for legislative action. Another public hearing was scheduled.

The Third Public Hearing: April 20, 1976

Pro and con arguments were again received at this hearing in the form of letters and personal appearances. About one to two hundred persons attended this hearing.

The SEASC again claimed support for the Ordinance. John Kariotis, chairman of the Seismology Committee of the SEASC, personally attended the hearing. Kariotis stated that the SEASC not only advocated the Ordinance, but would like it to be extended to all existing unreinforced masonry buildings. He also proposed that buildings be brought up to a reasonable degree of conformance. Kariotis then discussed the concept of risk analysis. He suggested that this concept could be applied to the Ordinance. It would require established criteria whereby less than 100 percent compliance to the seismic design requirements of the current code might be used based on a determination of risk. According to Kariotis, "although the Seismology Committee [of SEASC] is not in disagreement that 100 percent conformance to the current code should be the standard, there are several individual engineers who feel that a lesser percentage is reasonable" (from minutes of April 20, 1976 hearing). Kariotis did not recommend any specific figure at the hearing. He did warn that buildings constructed immediately after the Long Beach quake of 1933 were not of an acceptable construction. Even buildings built as late as 1971 would not be of reasonable earthquake design because they lacked an important feature in seismic resistance, "ductility." In Kariotis' opinion, 90 percent of the lateral force requirements of the current code might be a reasonable level of acceptability. A great deal of knowledge on how to minimize hazards without bringing an entire building up to the current code existed. He also endorsed the opinion that historical buildings required special consideration.

Ben Schmid, President of SEASC, spoke to the Commissioners just after Kariotis. Schmid stated that there was considerable study being done on developing

a matrix based on hazard and occupancy. The matrix would be available within a year and would provide a guide to enforcement priorities and for a sliding scale on levels of compliance. He suggested that the proposed Ordinance be adopted as worded and later, when the matrix is completed, other criteria could be developed accordingly. He did not believe that there would be much saving in money if a building was repaired up to 80 percent rather than 100 percent of the current code.

UCLA Engineering Professor C. Martin Duke strongly endorsed the Ordinance. His support came in the form of a letter, rather than a personal appearance. He believed that about 100,000 or more people who live or work in the pre-1934 unreinforced masonry buildings could be injured or killed in the event of an earthquake, unless steps were taken to prevent these buildings from remaining a hazard (letter to Building and Safety Commission, April 9, 1976).

Some con arguments. The National Association of Theater Owners of California asserted that the whole matter originated from a "minor incident" in a single theater, and that the matter of the Ordinance got completely out of hand. Their position was that theaters as a group are the safest type of buildings. Some reasons given for this belief included: (1) the theater industry maintains a program of safety drills and inspection; (2) the theaters have a good record of safety as verified by the lack of damage to any theater in Los Angeles from the last earthquake (date of last earthquake not given--can presume it to be 1971); (3) theaters have proved to be safe because many of them were used as air raid shelters during World War II. The representative from this organization stated further that the Ordinance would affect many buildings in "red lined" areas of the city and would have a large economic impact in those areas due to a lack of funding.

Other theater groups that were represented at the hearing gave, as their primary complaint, the serious problem of funding. There were also representatives

of several churches present who specifically requested that the Commission look into the problem of funding. The representatives of the United Methodist Church and Faith United (a Presbyterian group) asked for an extension in compliance time--from three to five years longer in order for fund-raising programs to be launched. The representative of the Los Angeles Council of Churches said that, although he previously believed that the two-year time period specified in the Ordinance was adequate, he now believed that a three-to-five year total compliance time would be better because of the difficulty for churches in securing funding.

The president of the Southern California Chapter of the American Association of Architects, the Chairman of the State Historical Building Codes Advisory board, and the General Manager of the Pueblo de Los Angeles State Historic Park pleaded for the inclusion in the Ordinance of some reference to special consideration for "historic buildings" and their preservation. These organizations identified about fifty such buildings which were of unreinforced masonry. They believed the bulk of them could be adequately reinforced if analyzed and considered on a case-by-case basis. Furthermore, they pointed out that as of January 1, 1976, SB 927 became a state law. This law provides for regulations promulgated by the State Architect to assist in the preservation of officially designated historical buildings. Therefore, they were of the opinion that because SB 927 was now a state law, the City Council and the Building and Safety Commission should recognize it. It was suggested that the following provision be included in the Ordinance:

> The provisions of this Section shall apply to every building which meets all of the following criteria, unless such building is officially designated as an historical monument and is therefore to be considered pursuant to the historical provisions of Part 2 of Title 24 of the California Administrative Code (from statement of Burnett C. Turner--representative of above organizations--at the hearing).

Commissioners' concerns and recommendations. During the hearing of April 20, the Commissioners saw funding as the primary problem. The issue of funding

increased in scope with some of the churches expressing concern over this matter. What intensified the problem even further was the fact that there was no governmental funding available. This was verified by Tom Billich's (the representative from Councilman Cunningham's office) statement at the hearing. Billich stated that most of the buildings are in areas where no financing is available. He doubted whether there would be any grants available from the state or federal government. At that time, there was not any city funding available.

Although there was no funding available at the state level, Robert Olson, the Executive Director of the SSC, stated at the hearing that there was a proposal being worked on by the SSC to request funding for the correction of unreinforced masonry structures. Furthermore, the SSC also proposed a resolution urging that federal funding be obtained (similar to federal disaster money). However, Olson did not believe that the state would come up with any funds. The only thing the state might do is help by granting some type of tax or assessment relief.

During the hearing Commissioner Dunne stated that "funding is an important issue and it appears that the best source is from the federal government." She felt that this matter should be pursued further, perhaps by the City Council of Los Angeles. She concluded that a letter should be transmitted to the City Council and the Mayor urging them to pursue funding for earthquake abatement on the federal and state levels as well as investigating any possibility of city funding.

Commissioner Better did not agree with Dunne's suggestions. She believed that the Ordinance should be written to include a funding provision. In fact, according to Better, no action should be taken on the Ordinance at all until the Department of Building and Safety reviewed the funding proposal.

As a result of the third public hearing, the Board of Building and Safety

Commissioners presented recommendations for changes and modifications within the Ordinance to R. J. Williams and the Department of Building and Safety. They were: (1) The compliance time should be extended to a total of four years for full compliance; (2) Buildings housing assembly rooms which are used less than ten hours a week should be exempt, or the compliance date for such buildings should be extended (based on the recommendations from some of the church organizations); (3) Cultural or historical monuments should be specifically referenced in the wording of the proposal; (4) Wording should be included in the proposal to indicate that this is just the forerunner of possible future legislation for all unreinforced masonry buildings in Los Angeles; (5) Existing buildings would not have to be brought completely up to current structural requirements, but would have to meet a percentage of total compliance; and (6) A sliding scale for compliance should be established based on life hazard depending on the number of occupants and frequency of use of the building.

The above recommendations did not include any funding provision, but did include all of the other suggestions made by the interested parties present at the hearing. The Commissioners concluded that the funding issue was to be a separate problem. They followed Commissioner Dunne's original suggestion, made at the hearing of April 20, rather than that of Commissioner Better. On April 27, 1976, a letter was sent to the City Council and to Mayor Bradley urging them to "take all necessary steps, as soon as possible, to investigate and lobby for federal and/or state grants, low-interest loans, or tax incentives so unreinforced buildings can be repaired or removed without the large financial hardship that will result."

On May 4, 1976, R. J. Williams responded to the Commissioners' recommendations for changes in the Ordinance. The Department of Building and Safety added an exception for buildings designated as official historical buildings; these structures would come under an alternative code. For other buildings, the

department included a provision for alternate methods of construction, where strict application of the code proved to be impractical because of cost. Compliance time to obtain a permit was extended to two years (from one year) and the time to complete repairs was extended to four years (from two years). What was not added was an inclusion of all unreinforced masonry buildings. The main reason given was that the Department of Building and Safety considered the 300 public assembly buildings to be the most hazardous.

At this time, the Department of Building and Safety believed that there was an urgent need for the proposed Ordinance. The reason given for such urgency was "a recent report of the USGS which predicted catastrophic results if a major earthquake were to hit the Los Angeles area in the near future. The report estimated that such an earthquake could kill up to 12,000 people and injure as many as 48,000 people." Because of this, "the Department strongly recommends that promulgation of the proposed ordinance, as revised" be carried out "so that the 300 assembly buildings can be repaired or evacuated as soon as possible for the protection and life safety of the people who occupy them" (letter to Board of Building and Safety Commissioners, from R. J. Williams and F. V. Kroeger, Chief of the Conservation Bureau). It was proposed by the Department of Building and Safety that the other buildings were to be studied for proposed inclusion at a later date.

On May 11, 1976, the Building and Safety Commissioners met to review the above revisions. The problem of funding again arose. Commissioner Better moved that some kind of amendment be made stating that the Council should seek a method of creating a system to assist persons in meeting the costs of the abatement program. A motion was made and seconded that the proposed Ordinance be approved and transmitted to the City Council. In the end the revised Ordinance was accepted by the Commissioners, without any viable funding amendment. However, the Board did request the Building and Safety Committee of the City Council

to seek a funding program along with the abatement program (letter to the Building and Safety Committee from the Building and Safety Commission, May 11, 1976).

From this point on, the Building and Safety Commission's activity began to diminish, and finally faded from the scene completely. At this stage the City Council took over consideration of the Seismic Safety Ordinance.

A new element related to the Ordinance surfaced. For the first time the issue of posting warning signs on hazardous buildings arose. Mayor Bradley received a letter from Gloria Nickel, a concerned citizen, inquiring whether Los Angeles had an effective plan to inform the tenants who occupied the unreinforced buildings about the condition of their dwellings. This letter, written on April 26, 1976, was particularly effective. Carbon copies were sent from Nickel to Governor Brown, Senators Cranston and Tunney, Councilman Gibson, and the Department of Building and Safety manager, Robert Williams. She also sent copies to various members of the scientific community, such as Dr. James Whitcomb, Dr. Karl Steinbrugge, and George Alexander (Los Angeles Times science writer).

Nickel responded to the earthquake predictions as a knowledgeable and informed citizen:

> Considering a recent rash of statements by the California Earthquake Prediction Evaluation Council and the USGS's Earthquake Research Center; considering the Palmdale bulge; considering the recent prediction of a spasm along the San Andreas fault, I believe your vulnerable tax-paying citizens have a right to know if they are occupying buildings with no more seismic resistance than the Veterans' hospital that collapsed during the 1971 earthquake. People should be informed NOW of this hazardous condition.

Prior to the Nickel letter, the building ordinance was primarily about the repair or demolition of unsafe structures. Now, a new element had been introduced--whether or not signs should be posted on these designated buildings, alerting others besides the owners. Implicit in her letter was the assumption that apartment buildings were also affected by the ordinance.

Nickel's letter was referred to the Building and Safety Commission by Mayor Bradley. Posting warning signs raised the question whether the city would be liable for injury in any publicly owned buildings posted with such signs. It should be noted that the concern for liability only arose at this time because of the posting of signs. If buildings were posted as being hazardous and then no action taken to vacate them or correct such conditions, the city might be liable if anyone in such a building were injured due to an earthquake. The Commission requested that the City Attorney advise them on this matter and that a representative from the Attorney's office be present at the next Building and Safety Commission meeting to apprise them of any liability consequences.

At the following Commission meeting on June 15, 1976, William Burge, the Deputy City Attorney of Los Angeles, confirmed the suspicions of the commissioners. In Burge's opinion, "such an action could leave the city vulnerable to numerous lawsuits of inverse condemnation" (from Building and Safety Commission minutes, June 15, 1976). Furthermore,Burge believed that posting of buildings would have two other consequences: (1) It could cause economic repercussion to owners; and (2) It could have the same effect as a demolition order if the particular building was determined to be hazardous.

Responding to the same posting issue, F. V. Kroeger, Chief of the Conservation Bureau of Los Angeles, stated that "any positive action to notify owners or tenants of the hazards of living in unreinforced masonry buildings could cause serious economic loss" (from minutes of June 15, 1976 meeting). According to Kroeger, the best way for people to decide what to do would be to have an education program teaching them how to determine which buildings were unsafe.

At the end of the meeting the Building and Safety Commissioners came to several conclusions: (1) They gave their support to the proposed ordinance; (2) Funding for property owners was said to be a problem; (3) The ordinance

was considered to be a forerunner of proposed future legislation on unreinforced masonry buildings in the City of Los Angeles; (4) Any response to the issue of posting warning signs should be sent to the Mayor, since Ms. Nickel's communication was originally sent to him. Therefore President Cremins would direct the Board's secretary to submit a summary of the Building and Safety Commission discussion on posting to the Mayor.

The meeting of June 15 was the last one held by the Commissioners on the Ordinance. The last action taken by the Commissioners was a letter written to the Building and Safety Committee of the City Council by Jerry Cremins (president, Building and Safety Commission) informing the Committee of the aforementioned conclusions. Cremins requested that the City Council, through the Building and Safety Committee, look into the matter of funding and future legislation.

In late June,1976, the Building and Safety Committee carried out some of the recommendations of the Commission. Gerry Colina, Legislative Assistant to the Building and Safety Committee, asked the City Attorney Burt Pines: (1) to report on the constitutionality of funding to be provided by the city or other levels of government via loans; (2) to formulate procedures for testing buildings in order to determine their structural capacity to withstand earthquakes, in coordination with the Superintendent of Building. Ken Spiker, Chief Legislative Analyst for the City Council, wrote a letter to the Building and Safety Committee of the City Council reporting his investigation of possible funding sources to finance renovation of structures to comply with proposed code amendments for earthquake safety. The following information and suggestions were provided by the office of the Chief Legislative Analyst:

(1) The City has a Community Development Block Grant, in which $433,000 is allocated for loans for rehabilitation, modernization, and conversion of commercial properties immediately adjacent to targeted housing and community development areas. These are specific areas in the city designated as Neighborhood

Preservation, Neighborhood Conservation and Community Revitalization areas. By the time of Spiker's letter, the Community Development Block Grant was not an operative funding solution. To resolve this matter, Spiker stated further that the Mayor's Office of Urban Development was negotiating with financial institutions to operate this program. Final actions on such a commercial loan implementation plan were expected to be completed by October, 1976.

(2) A similar approach might be used for commercial properties located in other sections of the city, and for non-profit organizations not covered under this program. Also, additional funds could be allocated in next year's Community Development Block Grant application to provide low-interest loans or grants.

(3) NSF has recently established an advisory group of nationally renowned experts to review and advise the Foundation on acceleration of a federal earthquake program.

(4) The City could support or sponsor state and/or federal legislation to provide tax incentives and financial assistance for code compliance to make buildings earthquake-safe.

(5) Two bills were pending in Washington at this time which were related to standards of earthquake safety. One was Senator Alan Cranston's bill, "The Earthquake Disaster Mitigation Act of 1975" (S 1174), which passed the Senate May 24, 1976. This bill would allot $150 million for earthquake research--but no funding provision was included. The other bill was the National Earthquake Hazards Reduction Conference Act of 1976 (HR-13845-Mosher). If enacted, $14 million would be authorized for the next five years and part of the money would develop plans for the improvement of earthquake-resistant designs and building codes. These bills were scheduled for consideration by the State, County, and Federal Affairs Committee on July 19, 1976.

(6) If the City Council adopted a position relevant to such legislation,

as described above, it was suggested that Los Angeles' representative in Washington could present influential testimony before final action was taken by Congress.

(7) The State Seismic Safety Commission is the agency that would recommend financial assistance on the state level. Therefore, it was suggested that the City's legislative representative in Sacramento provide such input to the SSC. Further funding possibilities will still be searched for (letter to Building and Safety Committee from Ken Spiker, July 12, 1976).

While the Council's legislative office was pursuing funding possibilities, the City Council was discussing the issue of posting warning signs. Such discussions were taking place during the months of August, September, and October in the Building and Safety Committee of the Council. During this period the media featured articles about the Ordinance and the issue of posting signs. The Los Angeles Times and the Valley News each had one article about this topic on August 28 and 29 respectively. The essential point presented to the public by the media in late August was that the Los Angeles City Council approved a warning required on about 14,000 unreinforced masonry buildings, instead of requiring owners to bring them up to earthquake-resistant standards. According to the media, this "approved plan" followed a previous one which was rejected by the Council that would have "forced" owners of unsafe buildings to bring them up to code regulations.

On September 5, the Los Angeles Times had an editorial suggesting that "people's lives are the overriding consideration in regard to the assembly buildings. The buildings should be strengthened and it is the legal responsibility of the owners to do so." Therefore, the Times favored government participation in this matter (LAT, September 12, 1976).

The Santa Monica Evening Outlook had one article on the issue of building safety on September 13. The essence of this article was that the Santa Monica

City Council was now considering a proposal to require the posting of warning signs on unreinforced masonry buildings that had been identified as likely to collapse in a strong earthquake. The article also said that such a council proposal was expected to meet with opposition from business people occupying unreinforced structures in Santa Monica.

On September 21, two letters were written to the Los Angeles Times about the building safety issue. On letter was addressed to the Times' editorial of September 5. This individual disagreed with the position of the paper. A reason given for the opposition was that structural rehabilitation was too expensive and "unnecessary." This individual preferred a more practical approach which would have a code tailored specifically to earthquake strengthening while concentrating on doing away with "less essential requirements." The other letter was written by an individual who owned some of the pre-1934 brick buildings. He was of the opinion that the structures provide low-cost housing to persons with low incomes. He stated that bringing these buildings up to current earthquake codes would be about 80 percent of replacement costs. According to this landlord, if this were to occur, the rent on the apartments would double.

One other article was printed about the proposed building safety ordinance during September, on the 29th. The Valley News reported that some earthquake safety experts had begun to distrust the safety of newer medium size structures as well as the pre-1934 unreinforced buildings. The reported conclusion by these experts was that a certain type of building design used in southern California between 1950 and 1970, usually in structures four to twelve stories high, was not as earthquake-resistant as it should be. According to them, a building code alone is not enough; a building's safety also depends upon the architect and design engineer.

In October the Los Angeles Times had two articles on the building and safety issue. The first was printed on October 23. This front-page article

in Section II discussed the recommendations of the Building and Safety Committee of the Los Angeles City Council. The headline was "Stronger Rules on Quake Safety Urged." The article began with the following statement. "A Los Angeles City Council committee has recommended an ordinance to require unreinforced masonry buildings--both private and public--to be made earthquake-resistant within ten years of the ordinance's effective date" (LAT, October 23, 1976). The Los Angeles Times report elaborated further upon the proposed Ordinance. The Department of Building and Safety would be required to carry out inspections of pre-1934 buildings within one year of the Ordinance's operative date. Property owners would then be given thirty days after receipt of notice that they were in violation of the Ordinance and would have to post warning signs. The owners would have ten years to bring their buildings up to present-day codes. The article also reported that among the 14,000 affected structures the 300 assembly buildings were the most hazardous.

On October 27, the Los Angeles Times carried an editorial about the Building and Safety Committee's recommendations. The paper stated that strengthening a building could cost as much as 80 percent of what would have to be spent to build a new structure. The 14,000 buildings could cost as much as five billion dollars. The paper claimed that federal funds should be pursued for building rehabilitation. The paper also supported the perspective of the Building and Safety Committee that the 14,000 structures should be reinforced.

The City Council also received letters favoring the enactment of the Ordinance, as well as some that opposed it, during this period (summer and early fall of 1976). For example, the Chairman for the State Historical Building Code Advisory Board now supported the Ordinance because it contained a paragraph on historical preservation of certain designated buildings. Professor C. Martin Duke of Engineering at UCLA, SEASC, and Kovacs-Dyer and Associates (an architectural firm) endorsed the Ordinance. These letters were similar to

the "pro Ordinance" responses that were presented to the Building and Safety Commission in the earlier phases of the development of the Ordinance. Now they were directed to the Building and Safety Committee of the City Council.

The proposed Ordinance was again revised in October. This marked the fourth revision. This time it applied to all 14,000 buildings and would require the building owners to post warning signs informing the public that the building was unsafe in an earthquake. The Ordinance called for the inspection of all pre-1934 buildings within the city. The owner of each building would be told of its condition and would have thirty days to appeal the decision. The owners would have until January 1, 1987, to make repairs.

On November 4, two letters were written to the Los Angeles Times by concerned citizens who said that the costs of renovation were too high and questioned what would happen to the tenants in those buildings. The Times also printed one letter in support of the ordinance, on November 4. It was written by Dave Cunningham, the Chairman of the Building and Safety Committee. Cunningham strongly favored the saving of human lives above all else. However, he did point out that government funding or direct low-interest loans could be used to aid property owners. During this time Mayor Bradley also received a letter from an extremely articulate lawyer who was an apartment owner, citing thirteen reasons why the proposed Ordinance should not be adopted. Some of his reasons were that the poor tenants living in these buildings would suffer greatly; these buildings have stood safety for fifty years or more and have demonstrated just how safe they are; the Ordinance is unfair and unjust to property owners. The National Association of Theater Owners now presented similar arguments to the City Council as they had done to the Building and Safety Commission earlier, strongly opposing the Ordinance.

On November 17, 1976, a very "heated" City Council meeting was held to discuss the modified Ordinance. About 250-300 persons attended this meeting.

Several councilpersons urged the immediate passage of the Ordinance, stressing the urgency of the situation by citing evidence that a major quake in the Los Angeles area would in all probability cause approximately 1,500 buildings to collapse, resulting in 28,000 casualties and 12,000 fatalities; most of these would take place in the pre-1934 buildings. They explained that although the costs would be high, owners would have ten years to renovate or demolish their buildings. At this point Councilman Lindsey urged the Council to postpone voting on the Ordinance until his constituency could lodge a protest to the Council. He stated that most of the buildings in question were in his district, and that he wanted to give his constituents a chance to "speak their minds." In a highly emotional manner, he charged that the Ordinance would cause the loss of nearly 50,000 jobs in his district because of a loss of business. Also it was charged that no insurance company would issue or renew a policy on a posted building, causing an extreme liability problem for the owners. After considerable debate, the voting was finally postponed until December 9, 1976.

In the interim, letters protesting the Ordinance were written to particular councilmen or to the Council itself. They were from organizations such as the Hollywood Businessmen and Property Owners Association, the Apartment Association of Los Angeles, the Hollywood Chamber of Commerce, and legal representatives of these organizations. These letters argued against the Ordinance and particularly opposed the idea of posting. Other individually written letters to the Council were from an owner of a company in the designated area, an owner of a building, and some tenants. These letters largely reiterated the arguments of the property owners' organizations. Basically, economic costs were given as the primary reason for opposition to the Ordinance. The number of protesters greatly increased with the inclusion of all unreinforced buildings in the Ordinance.[7]

[7]According to Rachel Dunne, Building and Safety Commissioner, the audience now increased from 100 persons at the Building and Safety hearings to about 300 at the Council's meetings--field interview, April 4, 1978.

On December 2, 1976, the Apartment Association of Los Angeles County took out a full page paid advertisement in the Los Angeles Times in opposition to the Ordinance. The language of the notice was an emotional appeal to all apartment dwellers to oppose the Ordinance because they faced eviction if it were enacted. In addition to the advertisement, the Association sent a letter to all "owners and operators of brick buildings in the City of Los Angeles." Two of the key paragraphs reflect the tone of this letter:

> The Apartment Association of Los Angeles County, Inc., is leading the fight against this ordinance. We are doing the necessary legal work and research, coordinating speakers to appear at the December 9, 1976 Council meeting, and we have begun a major and expensive newspaper advertising campaign. We can defeat this unnecessary and confiscatory ordinance if we get 100% cooperation and support from owners of the affected buildings. 100% cooperation means your attendance at the December 9, 1976 meeting of the Los Angeles City Council, 10:00 A.M., Council Chamber, Los Angeles City Hall. 100% support means your contribution of $100.00 per building to the Apartment Association's Legal Fund....We need your cooperation then, we need your support now....
>
> When the unions call, the members rally. When the farm workers call, the members march. When your Association calls, as it is doing now, we hope you respond. All you have to lose is your livelihood. We must defeat this ordinance.
>
> (signed by Howard Jarvis, Executive Director, Apartment Association of Los Angeles County, November 22, 1976)

When the president of this organization was asked (in a private interview given one of the researchers) why his group opposed the Ordinance so strongly, he stated a variety of reasons: lack of ability to predict earthquakes; past experience--the fact that the earthquake-resistant hospital in the Sylmar 1971 earthquake collapsed yet a pre-1934 building a block away did not even crack; and the economic ramifications in terms of cost of renovation, loss of jobs, and loss of low-income housing. He stated that his organization planned to continue to fight the Ordinance until it was defeated.

On December 9, 1976, the City Council once again considered the Ordinance, but this time their meeting was attended by approximately seven hundred people. Over half of them were there to protest the passage of the Ordinance. Councilman Lindsey again opposed the posting. He gave a very emotional speech, breaking

only to let the applause in the room die down. He stated that although the Ordinance was construed as a "safety" measure it was in fact a "hunger" measure--"what was more important, safety or going hungry?" He stated further that he was not against giving owners ten years to comply, but posting signs--"Over my dead body!" In light of the overwhelming opposition to this Ordinance from the audience, the Council deferred voting on it and sent it back to the Building and Safety Committee for more "citizen input."

The Building and Safety Committee received three communications about the economic impact and legal ramifications of the proposed Ordinance as it applied to city owned buildings. On December 16 and 22, William Burge of the City Attorney's office informed this Committee of whether the City would be held liable if posting signs was permitted.

> ...if the City Council finds and determines that the subject ordinance is for the promotion of the public health and safety (i.e., that the buildings in fact may be unsafe to their occupants in the event of a moderate or severe earthquake) and that the means set forth in the proposed ordinance to promote and accomplish the protection of the public health and safety (i.e., the posting of signs and the ultimate repair or demolition of such buildings) are reasonably appropriate to the purpose, it is our view that the ordinance would be upheld by the courts as a valid exercise of the police power...and not a taking or damaging of property for which the City could be held liable in damages. (Report of December 16, 1976, by William Burge to Building and Safety Committee of the City Council).

Burge's second report on December 22, 1976, addressed the question of whether the City would be liable for its failure to enact and enforce measures to make pre-1934 buildings earthquake-resistant. The Attorney's office concluded:

> ...there is at least some possibility that the City would be held liable where it has prior knowledge of the unsafe condition of any building owned by it which proximately causes the injury. Actual liability can only be determined, however, under the specific facts which pertain at the time of injury.
>
> On the other hand, we are likewise of the view that, should the Council determine that it was impractical to take corrective action after taking into consideration such factors as the feasibility and practicability of earthquake protective measures, the extent of danger of injury to others, and the cost of protecting against the seismic risk, a reasonable defense could be urged against any such City liability. In addition, the fact that earthquakes are an act of God could also be urged as a defense (report to the Building and Safety Committee of the City Council by William Burge, December 22, 1976).

The third report on the economic impact of the proposed Ordinance was prepared by F. V. Kroeger, Chief of the Conservation Bureau, and approved by R. J. Williams, General Manager of the Department of Building and Safety. The copy of this report in the Building and Safety Committee file on this issue was dated December 21, 1976.

A survey was taken randomly by the Department of Building and Safety to estimate the effects of the Ordinance on businesses and residental property. Most of the report was based on visual inspections of over 200 buildings located throughout the City which would be subject to the proposed Ordinance. These buildings were selected at random from the Department's old parapet repair index. The result of this investigation was then expanded by direct ratio to reflect the estimated 14,000 unreinforced masonry buildings still in existence. Some of the report's main features were:

(1) Business effect: It was estimated that approximately 14,500 businesses employing 75,000 people are housed in unreinforced masonry buildings throughout the City. The Department of Building and Safety estimated that only 8,300 businesses and 48,800 employees would be permanently displaced. The survey also revealed that a vacancy factor exceeding 10% existed in these types of structures.

(2) Residential effect: It was estimated that 29,000 occupied guest rooms and dwelling units housing 72,000 people would be affected by this Ordinance. The Department of Building and Safety anticipated that only 18,600 such units and 46,300 people would be permanently displaced, because the vacancy factor of the residential buildings surveyed exceeded 15%.

(3) Estimated repair cost: The total estimated repair cost would be $660 million, assuming that attrition would account for 4,000 buildings being demolished over the ten year period covered in the Ordinance.

(4) Estimated demolition cost: The total estimated demolition cost of the remaining 5,000 buildings would be $67 million.

(5) Estimated value of buildings: Based on average values of six dollars a square foot for commercial and industrial buildings and ten dollars a square foot for residential buildings by the County Assessor's average estimate, the total market value of the 14,000 buildings is approximately $840 million.

(6) Attrition rate: The Department's investigation revealed that over 20% of the buildings surveyed had already been demolished.

More citizen views about the Ordinance were heard at an open meeting of the Building and Safety Committee on January 6, 1977, which was attended by about fifty people. Most of these people were representatives of interest groups, such as insurance companies and building owners' associations, who were opposed to the Ordinance. The arguments that ensued were polarized, with the interest groups opposing the Ordinance for economic reasons and the Building and Safety Committee trying to gain support for it on humanitarian grounds. According to an insurance representative at the meeting, if the owners were forced to refurbish their buildings, the economic impact would be great. Unless the Council agreed to subsidize owners or renters, he believed it best to forget the Ordinance. Furthermore, "people perceive the risk of death or injury from earthquakes as one they are willing to undertake. It's not one of the risks they're willing to modify their behavior for."

Another insurance representative stated that his company would never provide earthquake insurance on any building that had a sign posted stating it was a hazardous structure. For him, the difference between a posted and an unposted building was that "an unsafe building without a sign we do inspect and set apart. If the city tags a building as unsafe, we're liable." Councilman Wachs retorted that he could not see any difference at all in insuring a building with or without a sign. He concluded that posting of signs hinged on how it would legally affect the building being insured.

Nothing definite about the adoption of the Ordinance occurred directly after the January 6 meeting. The City Attorney's office was requested to report on the possibility of increased liability by the owners of buildings within the scope of the Ordinance as it applied to privately owned buildings. William Burge of the City Attorney's office submitted such a report to the Building and Safety Committee on January 14, 1977. The office could not definitely conclude whether the adoption of the Ordinance would increase the

possibility of liability by the owners and occupiers of such buildings. Burge's reasons for this were:

> ...the proposed ordinance would require the Department of Building and Safety in essence to advise the owner of a building within the scope of the ordinance that such building is deemed hazardous in the event of a moderate or severe earthquake, and would thus increase the potential liability of the owner since he would have knowledge of the condition. On the other hand, however, the ordinance would require the owner to post a sign warning of the potential danger to persons coming on the premises and thereby decrease his potential liability.
>
> We point out, however, that lack of knowledge of the dangerous condition is not an absolute defense since the owner and occupier of land has an affirmative duty to exercise ordinary care to keep the premises in reasonably safe condition, and therefore must inspect them or take other proper means to ascertain their condition. On the other hand, knowledge of the condition by the possessor of the property does not necessarily result in liability, so long as the possessor acted reasonably in light of that knowledge. (report to the Building and Safety Committee of the City Council by William Burge, January 14, 1976).

During this same time, throughout the month of January, the media gave the issue of the Ordinance and posting of the signs more coverage than before. The Los Angeles Times strongly favored the Ordinance and described its positive aspects; in another article, it reported on the four-point program to make old buildings quake-resistant that the Department of Building and Safety devised. Strong public opposition to the Ordinance was reported in the Herald Examiner and the Los Angeles Times.

At this time the City Council still did not adopt the Ordinance. In light of the strong public opposition to it, the City Council conducted another open meeting for further community "input," on January 24, 1977. The same interest groups were there as before, opposing the posting of signs and favoring some kind of government funding program. Councilman Lindsey again brought some of his constituency to the meeting, who continued to applaud him after he spoke, especially when he said, "Let us give them help, not just bring signs out there with no program of helping them. That is not gratitude. You know this Ordinance would have passed if I didn't raise these questions. If we hadn't thought about it, we would have had signs all over the place." A strong supporter of

the Ordinance was also present at the meeting. James Slosson, geologist and member on the State Seismic Safety Commission, spoke; it was his contention that there would be socioeconomic costs with the Ordinance, but that the saving of human lives should be given priority. But the arguments were again polarized, with the interest groups opposing the Ordinance for economic reasons and the Building and Safety Committee (and structural engineers, geologists, etc.) trying to gain support on humanitarian grounds.

Although there was considerable debate over the proposed ordinance as drafted, all sides agreed that some measures should be taken by the Council to remedy the situation. The City Council referred the ordinance back to the Building and Safety Committee for further consideration. On January 25, 1977, the Building and Safety Committee offered the following recommendations to the City Council:

1. The Department of Building and Safety conduct a city-wide survey over a two-year period, for the purpose of identifying and categorizing all pre-1934 unreinforced masonry buildings, except one and two family dwellings. In order to do this two actions must be taken.

a. Subject to approval of the Mayor, the Council resolves that employment authority be granted to the Department of Building and Safety to employ:

1 Senior Building Inspector
6 Building Inspectors
1 Senior Structural Engineer
2 Clerk Stenographers

b. The Council appropriate $81,680 for the above positions.

2. That the Building and Safety Committee be instructed to appoint a special Committee, under the chairmanship of the Building and Safety Department, to develop a comprehensive earthquake safety ordinance for all pre-1934 masonry buildings except one and two family dwellings.

3. The Planning Department be instructed to review the impact upon the environment of such an ordinance under the CEQA Guidelines and to prepare an appropriate environmental report.

4. City Council request the Congressional delegation to seek financial assistance to rehabilitate buildings prior to disaster.

Finally, the Committee recommended that the accompanying ordinance requiring the posting of signs on earthquake hazardous buildings not be presented.

The City Council passed the compromise bill and set in motion the two-year survey of pre-1934 buildings and revision of the Earthquake Hazardous Buildings Ordinance. On March 31, 1977, Mayor Bradley approved the Council's four-point program.

Under the compromise bill the Building and Safety Committee established the Earthquake Safety Study Committee, headed by R.J. Williams, retired manager of the Department of Building and Safety. The Earthquake Study Committee consisted of two subcommittees which would investigate the major issues raised in the debate over the earlier version of the Ordinance. The Technical Subcommittee was comprised of experts in the field of structural engineering who were to devise a new Earthquake Hazardous Buildings Ordinance. The second subcommittee, the Impact Evaluation Subcommittee, was to review drafts of the new ordinance and to study the economic, financial, and social impacts on the City of adopting an earthquake safety ordinance. This committee was made up of representatives of the community, building-owners, and representatives of the financial community.

On February 15, 1977, the Building and Safety Committee prepared a list of members from various broadly based organizations for participation on the Special Study Committee. Councilman Cunningham, Chair of the Building

and Safety Committee, wrote letters to the recommended members, inviting them to be represented on the Code Development Committee (Special Study Committee). The letter stated that the work of the Code Development Committee would extend over a six-month period and its purpose was twofold: to examine the technical, earthquake engineering design criteria and to study ways to minimize the problems resulting from the enforcement of an earthquake safety ordinance.

The initial organization meeting of the Earthquake Safety Study Committee took place on March 23, 1977. At that time, members of the Committee were appointed to either the Technical Subcommittee or to the Impact Evaluation Subcommittee or, in some instances, to both. Following the initial meeting of March 23, 1977, of the entire Committee, the Impact Evaluation Subcommittee met on a monthly basis.

The initial members of the Committee were Douglas Dearden, Chairman, Richard DeLuce, Secretary, and Moe Greendale, Rev. Luther Holland, Al Atchinson, Earl Schwartz, William Heeb, Richard Wirth, Danny Montoya, and Robert Wilhelm.

After its initial two meetings, the Impact Subcommittee chairman and other members of the Subcommittee were concerned that the Subcommittee needed additional expertise. As a result, the Subcommittee Chairman sought and obtained approval from Mr. Williams, Chairman of the Special Earthquake Study Committee, to add additional members to the Impact Evaluation Committee. This was done during May and June of 1977. These additional members included Larry Scherzer of Arthur Young and Company, Jay Lloyd of Marsh and McLennan, David Reed of California Savings and Loan, Joe Vaccaro of Leo A. Daly Co., and Mike Saltzman of the City Housing Agency.

The Subcommittee identified a number of areas of concern. The Impact Evaluation Subcommittee believed that these areas of concern must be given full consideration by the City Council when it reviews and considers the adoption of the proposed ordinance. The areas of concern were as follows:

1. Cost of repair. At this time, no one has any firm figures on what the cost of repair and rehabilitation to meet the requirements of the proposed ordinance will be. The cost of strengthening under the current proposal may well be less than the amount of $16 per square foot projected for the 1977 proposal. Preliminary estimates, which vary widely, usually have been somewhere between five to ten dollars per square foot. They probably vary somewhat from building to building.

Some tests have been conducted under the auspices of the City's Building and Safety Department to determine a feasible and economic method of testing the buildings covered by the proposed ordinance. The new type of tests, in the opinion of the Department, should result generally in somewhat lower costs of repair. But such tests do not give any accurate information as to the costs of repair.

The Subcommittee believes that without reasonably accurate information as to the cost of rehabilitation required by the proposed ordinance that it is not possible to determine the impact of the proposed ordinance.

2. Availability of financing. Closely related to the cost of repair is the subject of financing such rehabilitation. No one knows whether any financing will be available. The best information available to the Subcommittee is that financing from conventional sources such as savings and loans, commercial banks and insurance companies may be difficult, if not impossible, to obtain.

At the present time the only federal funds available are only allocable to residential buildings. There appears to be none available for commercial structures.

One suggestion made to the Mayor's Office was to attempt to assemble a pool of funds from the local financial community, such as savings and loans, banks and insurance companies. Thus far such attempts have not been fruitful.

Without financing it would appear affected building owners in many cases will have no choice but to let their buildings be demolished pursuant to the proposed ordinance. The Subcommittee believes that until there is reasonable assurance that financing will be available, the City Council should defer enactment of the proposed ordinance.

3. Liability insurance. Another major area of concern is the question of liability insurance for the building owners. Once an ordinance is adopted, the best information obtainable by this Subcommittee is that underwriters may use the ordinance as a basis to either obtain very substantial premium cost increases or perhaps even refuse to write the insurance.

4. Relocation of residents. The Subcommittee has not been able to come up with definitive information as to whether any funds are available for relocation of residents resulting from displacement by either repair or demolition. None appears available for tenants of commercial buildings. The proposed ordinance does not cover buildings with four or less units and thus it will affect fewer residential buildings than the 1977 proposal.

5. Effect on residential tenants. Assuming that owners of residential buildings are able to obtain funds with which to repair their buildings to meet the terms of the proposed ordinance, it is obvious that rentals will be increased in order to offset such costs of repair. The Subcommittee has not been able to quantify with any precision what the norm of such increases would be. Nevertheless, there is no doubt that some increase in rentals would occur. The Subcommittee also has not been able to determine the impact upon the tenants. Certainly some significant number of tenants of these buildings are senior citizens and some significant number are from lower economic groups.

6. Effect on City taxes. The Subcommittee attempted to obtain some information about the possible impact on the City's tax revenue. Once the Building and Safety Department's survey of pre-1933 buildings is completed,

we understand that it will be possible to obtain a partial listing of assessed valuations for the affected buildings, but the Department does not have access to the amount of real property taxes. However, that probably can be estimated from the valuation figures. In addition, the effect on City property tax revenue will be less than formerly contemplated because of the passage of Proposition 13 which already has reduced substantially revenue from property taxes. Questions which are harder to analyze are the economic impact of businesses located in pre-1933 buildings moving out of the City entirely when faced with either having their tenancy interrupted or facing the cost of repair and rehabilitation of a pre-1933 building.

In connection with the problem of funding repair and rehabilitation of the affected buildings, the Subcommittee has identified a number of areas that need further exploration but all entail legislative action at either the state or federal level. These include such suggestions as tax incentives for owners who engage in rehabilitation work, perhaps along the line of incentives which have been granted for installation of home insulation and solar heating. Another possibility is low interest loans for rehabilitation work on an analogy that such work is similar to flood prevention work.

If the proposed ordinance is to be adopted, the Subcommittee recommends the adoption of a companion ordinance. It will permit the construction of a new building, resulting from demolition of a present structure due to the Earthquake Safety Ordinance, without the necessity of meeting present zoning requirements for parking and setbacks. The Subcommittee has concluded that this would provide incentives to owners and developers to provide new structures (which must meet higher building standards) which would be of greater benefit to the community than rehabilitation of present buildings.

In conclusion, as the Subcommittee has tried to deal with these problems since April of 1977, it has become apparent that the Subcommittee itself is not equipped to take on the task of preparing an environmental impact report, nor apparently was it ever contemplated that the Subcommittee itself would engage in the preparation of an environmental impact report. The Subcommittee has identified the social, economic and financial areas which it believes will be affected and has offered some suggestions which may be worth further exploration and development by the City.

The Impact Evaluation Subcommittee wishes to emphasize that these social, economic and financial impacts appear to be very real and should be given close consideration by the City Council in connection with the possible adoption of the proposed earthquake safety ordinance. (Source: Report of Impact Evaluation Subcommittee of the Earthquake Safety Study Committee, December, 1978.)

On May 17, 1977, the City Council met to review the budget for the new fiscal year. The City Council-mandated survey of quake endangered buildings in the Los Angeles area was threatened when the Council voted 11 to 3 to eliminate funds for ten inspectors from the city's $1 billion budget for 1977-78. The majority justified the cut contending that the salaries of the inspectors should be paid by the owners of the hazardous buildings. Further, it was argued that the city should wait until an ordinance is passed before hiring the inspectors. Councilman Ernani Bernardi of the 7th District, speaking for the minority, said that it was the city's responsibility to pinpoint hazardous structures. Upgrading the buildings, Bernardi argued, would have a heavy enough financial impact on owners. Dave Cunningham of the 10th District said that he intended to ask for reconsideration of the matter when council reconvened on May 18th (Valley News, 5-18-77). The following day, however, after testimony from Building and Safety Department

General Manager, Walt Brugger, that identification of unreinforced structures must precede an ordinance, an impassioned plea by Arthur Snyder that thousands of deaths could occur if the council did not act, prompted a reversal of the previous day's decision by a 9 to 5 margin. The vote meant that funding for building inspector salaries amounting to $200,376 was restored in the budget (Valley News, LA Times, 5-19-77).

In July, 1977, Councilman Cunningham's term as Chair of the Building and Safety Committee expired and he was replaced by Councilwoman Joy Picus of the 3rd District. During her two-year term the new ordinance regarding earthquake hazardous buildings was completed. The proposed ordinance did not include a provision to post signs on earthquake hazardous structures. Both the Building and Safety Committee and the Department of Building and Safety agreed that posting of signs on hazardous structures would not be advantageous and they were uncertain what posting of signs would actually do in alleviating the hazards of unreinforced masonry buildings. In an article in the Los Angeles Times R.J. Williams, Chair of the Earthquake Safety Study Committee, recalled, "we decided that it would be easier to get some kind of corrective program through than to get signs posted"(LAT 11-25-79). The philosophy of the Building and Safety Committee was to propose a new ordinance which would address itself to the life safety aspect of earthquakes. (Interview with Earl Schwartz, Senior Structural Engineer, February 22, 1980).

A preliminary draft of the new ordinance was completed in November, 1978, under subcommittee Chair Raymond Ziegler and the Department of Building and Safety. The report to the Earthquake Safety Study Committee stated:

> The purpose of the Ordinance is to promote public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on unreinforced masonry bearing wall buildings contructed before 1934. Such buildings have been widely recognized for their sustaining of life hazardous damage as a result of partial or complete collapse during past moderate to strong earthquakes.

The provisions of the Ordinance are minimum standards for structural seismic resistance established primarily to reduce the risk of life loss or injury and will not necessarily prevent loss of life or injury or prevent earthquake damage to an existing building which complies with these standards. This Ordinance shall not require existing electrical, plumbing, mechanical or fire safety systems to be altered unless they constitute a hazard to life or property.

This Ordinance provides systematic procedures and standards for identification and classification of unreinforced masonry bearing wall buildings based on their present use. Priorities and standards are also established under which these buildings are required to be structurally analyzed. Where the analysis or testing determines deficiencies, this Ordinance requires the building to be strengthened or demolished.

The proposed Ordinance included three main features.

1. It applies to unreinforced masonry bearing wall buildings constructed prior to code requirements of design for earthquakes. (October 6, 1933). Detached residential buildings with less than 5 dwelling units are exempted.

2. It recognizes the resistance of existing construction if still structurally sound. This will minimize resulting problems.

3. It establishes a phased compliance program that would extend over a 10 year period for completion allowing for extensions of time and appeals on hardship cases. Notification for compliance would be based on a priority system; however compliance would not be required to commence prior to:

(a) Six months for High Risk Buildings (large, open buildings with 100 or more occupants used more than 20 hours per week)--Class II.

(b) Eighteen months for Medium Risk Buildings (any buildings with 20 or more occupants if not an essential building or a high risk building)--Class III.

(c) Five years for Low Risk Buildings (all other buildings if not an essential building)--Class IV.

(d) Essential buildings required for emergency use immediately following an earthquake (hospitals, communications centers, fire stations, police stations, etc.) would have to commence compliance as soon as notified--Class I.

The new ordinance did not require building owners to bring these structures up to current seismic safety codes as did the earlier version of the ordinance. The proposed Ordinance required that buildings comply to 1940 seismic safety standards.

A unique feature of the new Ordinance was that it established priorities as to what types of buildings would need immediate attention and how long building owners would have to refurbish these old buildings.

> Buildings having a rating classification of I shall be notified first; buildings having a rating classification of II shall be notified second, but not earlier that 6 months after the effective date of this Division; buildings having a rating classification of III shall be notified third, but not earlier than 18 months after the effective date of this Division; and buildings having a rating classification of IV shall be notified last, but not earlier than five years after the effective date of this Division. Within each separate Rating Classification, the notification shall normally be based on the occupant load of the building, with the buildings housing larger occupant loads being notified first. The Department shall, upon receipt of a written request from the owner, order a building to comply with this Division prior to the normal notification date set forth in this Section. (Preliminary draft: Earthquake Hazard Reduction in Existing Buildings approved by the Earthquake Safety Study Committee.)

The proposed ordinance also established how building-owners would be notified, how owners could appeal, and how the ordinance would be enforced.

> Notification. The Department shall order the owner of each building to cause a structural analysis to be made of the building by a licensed civil or structural engineer or architect. If the building is found to be deficient in meeting the requirements of this Division, the owner shall cause it to be structurally altered so as to conform to such requirements or be demolished.
>
> The order shall be in writing and shall be served either personally or by certified or registered mail upon the owner as shown in the last equalized assessment roll, and upon the person, if any, in apparent charge or control of the building.
>
> The order shall direct that the structural analysis and the structural strengthening plans, if required, be submitted to the Department for review within 270 days after service of the order. If the owner elects to demolish the building, a statement declaring an intention to demolish shall be submitted to the Department within 270 days after service of the order.
>
> The order shall specify that permits required to demolish the building or accomplish the necessary structural alterations shall be obtained no later than one year after the service of the order, the necessary alterations or demolition must commence within 180 days of the date that the permit was issued and that the building be corrected to meet the minimum requirements of this Ordinance or be demolished no later than three years after such service.

Appeal from order. Within 180 days of the service of the order the owner or person if any, in apparent charge or control of the building, may appeal the Department's initial order and determination to the Board of Building and Safety Commissioners. Any such appeal shall be decided by the Board no later than 60 days after the date that the appeal is filed.

Enforcement. If the owner or other person in charge and control of the subject building fails to comply with the order within any of the time periods set forth, the Superintendent of Building shall order that the entire building be vacated and that the building remain vacated until all required analysis and structural alterations have been completed. Whenever compliance with the aforementioned order issued pursuant to the provisions of this Ordinance has not been accomplished within 90 days after the date the building has been ordered vacated, or such additional time as may have been granted by the Board, the Superintendent may order its demolition.

By the end of 1978, the Earthquake Safety Study Committee completed its study of the proposed Ordinance and approved the preliminary draft. In its report to the Building and Safety Committee, the Earthquake Safety Committee stated that enactment of the proposed Ordinance "would dramatically reduce the number of deaths and casualties as well as the amount of monetary damage to such buildings." Using the United States Geological Survey statistics for a major earthquake in the Los Angeles area, and assuming that 70 percent of the losses would be within the Los Angeles City limits, the following generalized estimates were made:

Deaths	Casualties	
8,500	34,000	With no program
1,500	8,000	With completed program

Using cost estimates from a study by the Impact Evaluation Committee, the Earthquake Safety Study Committee indicated that a major earthquake in the area would structurally damage an estimated two-thirds of the affected buildings with no program and would cause some structural damage to an estimated one-fourth of the buildings after a completed program. Calculations will show that in addition to saving an estimated 7,000 lives and preventing 26,000 casualties, more than 900 million dollars worth of building inventory

could be saved if the proposed Earthquake Hazard Reduction Program is completed.

The Earthquake Safety Study Committee strongly recommended that the Building and Safety Committee take the following action:

1. That the proposed ordinances, relating to Earthquake Hazard Reduction and Replacement of Earthquake Hazardous Buildings, be approved by the committee and sent to the City Council along with the appropriate Environmental Report.

2. That the Building and Safety Committee recommend to the City Council adequate staffing authority and funding to the Department of Building and Safety for implementation and enforcement of the estimated 10 year program.

3. That the Chief Legislative Assistant and Department of Community Development continue their efforts to seek financial assistance to rehabilitate such buildings. (Report of the Earthquake Safety Study Committee, December 14, 1978).

At about the same time, the Department of Building and Safety released a report to the Building and Safety Committee recommending that the following actions be taken:

1. Recommend approval of the proposed Ordinances contained in the Special Earthquake Safety Study Committee Report dated December 14, 1978 and request the City Attorney to prepare the official ordinances for presentation to the City Council with this report.

2. Recommend, subject to the approval of the Mayor, that the City Council grant resolution authority to the Department of Building and Safety for the following positions for the balance of the current 1978-79 fiscal year:

No.	Title
4	Building Inspector
1	Sr. Building Inspector
1	Sr. Structural Engineer
1	Structural Engineer
1	Sr. Struc. Engr. Assoc.
2	Clerk Steno
10	Total

3. Recommend, subject to the approval of the Mayor, that $78,340 be transferred from the Reserve Fund to the Unappropriated Balance and appropriated therefrom to the following accounts within the Department of Building and Safety for the last four months of the current 1978-79 fiscal year.

4. Recommend to the City Council that the graduated three phase staffing plan as described in this report, to allow for the expanding nature of the enforcement, be approved in concept. (Source: Report to Building and Safety Committee, January 9, 1979).

Public hearings in the proposed ordinance were held by the Building and Safety Committee in February and March, 1979. Opposition to the new ordinance was similar to opposition voiced over the posting of signs on earthquake hazardous structures; namely, the cost to building owners and the impact enactment of the ordinance would have on low income and elderly residents. Howard Jarvis, co-author of Proposition 13 and head of the Apartment Association of Los Angeles County (Save Our Bricks), was typical of such opposition. In a fund raising letter addressed to apartment owners, Jarvis stated that the proposed law could "force you (building owners) into involuntary bankruptcy." (July 23, 1979)

In July, 1979, the term of the Building and Safety Committee came to an end and new members were appointed to the Committee. Councilman Hal Bernson became the Chair of the Building and Safety Committee. Bernson saw three major stumbling blocks to passage of the proposed Ordinance, namely, the estimated cost of rehabilitation, means for financing the rehabilitation project, and the problem of relocating displaced tenants. Under his leadership the Committee carried out the recommendation of the Picus report (April 24, 1979) which suggested that the Building and Safety Committee investigate various means of financing the cost of enacting the Earthquake Hazardous Buildings Ordinance. Bernson's Committee began to meet with representatives of the financial community to develop a financial package which would include funds for strengthening hazardous structures and provide

earthquake insurance to building owners once loans were made.

The Department of Building and Safety completed its survey of pre-1934 buildings in November, 1979. A total of 7,876 unreinforced masonry structures were identified in the City of Los Angeles. Of the total number of unreinforced masonry buildings identified, 1079 are residential buildings, consisting of 811 apartment buildings and 268 hotels. The major portion of the residential buildings are located in the Hollywood, Wilshire, and Westlake communities. Most of the unreinforced masonry buildings in the City are commercial and industrial buildings (82 percent) concentrated in the Downtown-Central City area. According to the Building Department survey, there are 6,501 businesses employing nearly 70,000 workers currently occupying these structures. While the survey identified fewer unreinforced buildings than earlier estimates projected (14,000 buildings), the survey indicated that a major quake in Southern California could kill 8,500 people and injure 34,000 in the city of Los Angeles alone, most resulting from death or injury in these old buildings.

As we recall, the Building and Safety Committee recommended that the Planning Department study the impact of the proposed Ordinance on population and housing. In January, 1979, the Planning Department was commissioned to prepare an Environmental Impact Report which would evaluate the feasibility of the proposed Ordinance and suggest alternative courses of action. A draft of the Environmental Impact Report was completed in September, 1979, and presented to the Building and Safety Committee for comment. The following conclusions were reached in the Report:

A. Population and Housing

The passage of this ordinance could result in a loss of lower or moderately priced rental units and a permanent or temporary displacement of apartment residents. Outright demolition of residential structures would further deplete a limited amount of lower income housing stock now available to residents of the City. Temporary displacement would occur where repairs are extensive or of such a nature as to require the tenant to vacate the premises.

Using the worst case situation, there may be as many as 137,000 (3 times 45,622 units) apartment dwellers seeking, over a period of five to ten years, new housing in a market where low- to middle-income housing is not readily available. For these residents, many of whom are senior citizens and on fixed incomes, the low rental rates available in older buildings cannot easily be matched elsewhere in the City. Many could not afford the increase in rent certain to be passed on by rehabilitation expenses or the various relocation costs and may become an added burden to dependents, relatives or public assistance programs. For some, it could mean displacement from a community in which they have lived for many years and could be detrimentally disruptive to their social behavioral patterns.

Assuming that the majority of the owners of residential buildings will upgrade to ordinance standards rather than demolish, it is obvious that rents will be increased to offset such costs of repair. Even nominal rate increases would cause a hardship to tenants of these older buildings.

Mitigation measures. The decision to repair or demolish a building is based on a variety of economic considerations. Rehabilitation costs may be justified by economic benefits derived from increases in market value, anticipated life of the structure, expected revenue, and/or potential tax, or depreciation benefits. However, in order to rehabilitate these unreinforced masonry buildings, it will, in all probability, require low interest loan assistance to help to finance such improvements.

Dislocation of tenants can be expected. Consequences of this can be minimized by the following mitigating measures:

Rehabilitate building while still occupied on a unit-by-unit basis as units become vacant or by providing tenants temporary relocation quarters within the structure or nearby.

If dislocation is to be for an extended period of time, tenants should be given ample notice and assisted in finding suitable quarters.

Informational programs to advise owners and tenants of the purpose of the proposed ordinance.

The ordinance provisions further mitigate possible indirect adverse effects as follows:

The ordinance allows for a person or owner to appeal the Department's initial order and determination to the Board of Building and Safety Commissioners.

Amortization--depending on the "level of risk" there will be a phased program of notification, after which the owner has a nine-month period to submit plans to the Department of Building and Safety. Alterations or demolition must commence within 180 days of the date the permit was issued. This total program could entail between five to ten years from the time the ordinance is adopted.

Rehabilitation--Provide many jobs over a long period and ultimately would provide more income for owners and more tax revenue to the City because of increased value of the property.

The ordinance has the potential of improving the aesthetics of older buildings, renovated buildings could become economically competitive with new structures, and rejuvinate the older sections of the Central Business District.

Under current provisions of the zoning regulations, owners of legal nonconforming buildings that may be demolished as a result of the proposed Earthquake Safety Ordinance do not have replacement rights. In order to alleviate this potential hardship, the following amendment to the Los Angeles Municipal Code would permit their replacement when nonconforming as to use, yards and parking.

Replacement of earthquake-hazardous buildings notwithstanding any other provisions of this Article to the contrary, a building, nonconforming as to use, yards and parking, may be constructed to replace a legal nonconforming building which as been demolished as a result of enforcement of the Earthquake Safety Ordinance (Division 68 of the Building Code), provided that construction is started within one year of demolition and completed within two years of commencement, and that the use of said replacement building is not changed from that of the original. Otherwise, any reconstruction must conform in every respect with the current zoning regulations.

Exception: This provision shall not apply to an existing commercial or industrial use on property located in a residential zone, unless the residentially zoned property is designated in a Commercial or Industrial land use category on an adopted Community Plan Element of the General Plan.

Unavoidable adverse environmental impacts. Unless financing is available, property owners may not be able to upgrade their buildings to the proposed ordinance standards and demolition would be the only alternative as a result of the Earthquake Safety Ordinance. Demolition of these buildings would eliminate a significant number of low-income and senior citizen housing units. Relocation of these tenants to places of equivalent rents would be difficult, and in the absence of rent subsidy would create a significant hardship.

B. Commercial and Industrial

Many of the businesses operating out of pre-1934 unreinforced masonry buildings are smaller businesses and occupy those premises mainly because of the low rents. For some, the margin of profit would not substantiate an increase in rental rates of the more modern structures. In many cases, comparable space may be double the rate, resulting in business failure. If earthquake-hazardous buildings are remodeled to standards as proposed in the ordinance, businesses would certainly be faced with increased rental costs.

During the period of renovating, many businesses may be forced to relocate or temporarily close. For most smaller businesses the loss of business during even a short period of time, coupled with the anticipated rise in rent following renovation, would be economically crippling and may result in going out of business.

According to the Building Department survey, there are 6,501 businesses employing 69,887 workers currently occupying these unreinforced masonry buildings. Through enforcement of the Earthquake Safety Ordinance, the City of Los Angeles could be faced with a significant economic loss in the central business area where the structures are located.

The ordinance will have some beneficial economic effects. It requires that unreinforced masonry buildings be brought up to the proposed minimum standards for structural seismic resistance. This will create construction jobs at an estimated maximum cost to owners of such buildings, of $450,789,500.

The ordinance also has the potential of ridding the City of structural eyesores.

Mitigation measures. Business losses could be held to a minimum through provisions whereby the businesses could remain in operation during construction, providing sufficient advance notice, and assistance in finding temporary or replacement quarters nearby in order to continue service to the neighborhood.

Time phasing of the construction program to take advantage of non-peak periods would minimize disruption to the business.

Financial aid available for commercial and industrial property owners as researched by the Chief Legislative Analyst.

Unavoidable adverse impacts. Many businesses may go "out of business" because of increased rents in upgraded buildings, or may have to relocate or close temporarily. When the buildings are demolished as a result of the ordinance, there will be loss of commercial and industrial facilities where rentals are reasonable. Businesses may relocate outside of the City limits, contributing to a loss of tax bases to the City.

Two alternative lines of action were proposed in the Environmental Impact Report. The first alternative suggested upgrading pre-1934 buildings to conform to present building codes. This would be a harsher measure than the one currently under consideration by the Building and Safety Committee.

All existing earthquake-hazardous buildings which are subject to major damage or collapse in a moderate or severe earthquake should be repaired to conform to the horizontal force requirements of the present building, or demolished. This proposal does not exempt any buildings (e.g. less than 5 units).

Failure to submit within one year of service of the order, a letter of intent and detailed plans to repair or demolish the building, will be deemed a violation. When such violation occurs, the owner or person in charge of the building within 30 days, is required to furnish and post a sign citing the building as being in violation.

> This alternative is estimated to cost about $20 to $30 per square foot. In the absence of local, state or federal financial support to the affected ownership, it is conceivable that many owners may find it cheaper to simply walk away from their properties than to comply with expensive upgrading. However, upgraded buildings will increase in assessed value and the City would realize a higher tax yield.
>
> Upgrading residential units will guarantee a supply of low-cost housing, but it can be expected to become unaffordable to many when expenses are passed on to tenants.

The second measure proposed that the City not take any steps to mitigate the hazards of unreinforced masonry buildings.

> Under this alternative, the approximate 8,000 existing, unreinforced, masonry structures would not be affected and safety measures and other improvements left to the discretion of the owners. Owners would not have additional expenses in complying with the ordinance. In addition, there will be no forced relocation or displacement of residences and businesses.
>
> It is estimated that approximately 200 to 400 structures of this category are being decreased each year by natural attrition. As these buildings are over 40 years old, it is probable that the attrition could eventually eliminate many of these buildings during the next 50 years. (Environmental Impact Report, September, 1979).

In response to public opposition to the proposed Ordinance, the Building and Safety Committee requested that the Chief Legislative Analyst study potential sources of financing the rehabilitation of buildings that would be affected by the proposed Ordinance. In September, 1979, Chief Legislative Analyst Ken Spiker completed his study of potential sources of financing for the rehabilitation of earthquake hazardous buildings. The report concluded that the program to strengthen earthquake hazardous buildings would cost between $500 million and $1 billion over a ten year period. The report suggested over thirty-five potential Federal, State, and Local funding sources to assist owners in rehabilitating their properties as well as providing housing for tenants displaced while rehabilitation of residences takes place. The report also offered the following suggestions in coordinating and pursuing financing possibilities.

Direct the Building and Safety Department to meet with representatives of the involved City departments and other appropriate entities and report within one month's time on the coordinated approach that should be taken by the City to most effectively provide assistance. Their considerations should include:

Status of the Municipal Finance Agency; possible date of implementation; feasibility of expanding concept to provide additional funding for earthquake financing program; feasibility of that Agency's administering technical and financial assistance to those requiring it pursuant to the earthquake ordinance;

Status of the Ullman Bill and its possible impact both on the issuance of tax exempt bonds and borrowing from local financial institutions with HCD funds as leveraging mechanism;

Feasibility of establishing a Housing Advisory Service (HAS) which could provide coordination and informational service relative to the various funding alternatives, with funding by the State Housing and Community Development Department (This approach would be an alternative to the Municipal Finance Agency or as an interim measure, should the MFA be the logical administering agency but the time frame for using the MFA in this effort would be prohibitive).

Recommendations for amending the CARE, HELP, and/or MORE programs to make them more appropriate to the needs of those affected by the ordinance. In this regard, consideration should include: additional funding that could be allocated in the next HCD Program Year or reprogrammed for this effort; expansion of eligibility criteria; extension of loan repayment period; increase of loan level; and in the case of the HELP program, possible inclusion of loans that include an interest charge, lower than the market rate, for this particular program;

Discuss with the National Neighborhood Investment Corporation their continuation in the City, or expansion of activities to coordinate program of meeting code requirements relative to the earthquake ordinance for affected apartment owners; as an alternative to using Housing Advisory Service and/or Municipal Finance Agency, for this purpose;

Recommendations for amending the City's rent control ordinance to provide a different formula upon which rents could be increased for low and moderate income tenants in connection with rehabilitation mandated by the proposed earthquake ordinance;

Recommendations relative to how much money could be directed each year from the Community Redevelopment Agency Bunker Hill tax increment financing for purposes of providing displacement housing;

All other matters, as deemed appropriate, relative to taking advantage of existing programs with HUD and discussion with local financial institutions their possible future cooperation and involvement.

> Recommendations relative to City sponsorship of State legislation to permit a number of years during which there would be no re-evaluation of property on which seismic improvements had been made pursuant to the ordinance;
>
> Recommendations relative to City sponsorship of ammendments to the State Relocation Act to provide financial assistance to individuals or small businesses required to relocate because of this or a similar hazards abatement program;
>
> Recommendations relative to a City support position on ACA 55, presently in the Assembly Housing and Community Development, not set for hearing. ACA 55 would authorize the Legislature to impose a property tax surcharge upon commercial and industrial property. The amount of surcharge would be 10 percent of the annual property tax liability, excluding debt service levies;
>
> The proceeds from such surcharge would be used to provide financial incentives to public and private entities for construction or rehabilitation of residential real property and to facilitate public participation in the planning of local housing production. (Report of Chief Legislative Analyst, September 24, 1979).

Most of the opposition to the proposed Ordinance centered around the cost of refurbishing the pre-1934 buildings. No one was sure what the actual cost of such a project would actually be. Since estimated costs for rehabilitating pre-1934 buildings varied widely, the Building and Safety Committee proposed a study of the cost per square foot of reinforcing unsafe structures. In October, 1979, the City Council approved a grant of $30,000 for a private consulting firm to study the cost estimates for rehabilitating an average building and to estimate the cost of the entire project. This study is expected to be completed in late April, 1980.

Another public hearing of the Building and Safety Committee was held on Saturday, December 1, 1979. The meeting was specifically held on Saturday to accomodate people who were unable to attend weekday meetings. All those who attended the special meeting were handed a fact sheet stating the purpose of the meeting: "to assist committee members in their decision-making responsibilities." Ten members of the audience addressed the Committee, most voiced objection to the cost of enacting the ordinance. To quell opposition the

Committee informed the audience of the study underway to determine the exact cost of rehabilitating the hazardous buildings and that the Committee had looked into ways of financing such an endeavor.

To this end Assemblyman Mel Levine, of the Fourty-fourth District, introduced legislation creating a revolving low interest loan fund to assist small businessmen in their efforts to bring buildings into conformance with earthquake safety standards. In a letter to his constituents Assemblyman Levine stated:

> "I have seen estimates which indicate that unless action is taken to bring structures up to code, that a major earthquake could kill as many as 12,000 people and injure another 48,000. The recent earthquakes in Northern California should serve as a warning that something must be done now to remedy this situation.
>
> The costs of these structural improvements has been estimated to be as much as $30 per square foot, and many financial institutions have indicated that they are unwilling to provide the loan funds necessary. Therefore, it would seem that if these improvements are to be made, it will require government assistance," Levine said.
>
> Levine's bill would authorize the Department of Housing to work with commercial banks and savings and loans and, where necessary, local government, to implement the program. The interest rates charged for the loans would be no more than necessary to defray the costs of administering the program and repaying the revenue bonds issued to finance the loan program.
>
> "Swift action should be taken to minimize any possible danger in the Los Angeles area from a major earthquake. The passage of this legislation may save thousands of lives which would otherwise be lost. It should be a top legislative priority for the coming year," Levine concluded. (Legislative Report, March 1980, Volume 2, No. 4).

As of March, 1980, the Earthquake Hazard Reduction Ordinance has not been presented to the City Council for a vote. This will not take place until the study of cost estimates is completed and there is some commitment by government or private financial institutions to help finance the upgrading of earthquake hazardous structures. Councilman Bernson estimates that the City Council will not vote on the proposed ordinance until the end of 1980. While he expects opposition to the new law, he expects it to meet Council approval (Interview with Councilman Bernson, February 22, 1980). His efforts to work closely with building-owners and the financial sector should prove

beneficial in this regard.

Summary

Since 1976 the Los Angeles City Council has been considering whether to implement a seismic safety ordinance to reinforce pre-1934 masonry buildings. The first ordinance brought before the City Council in 1976 considered posting signs on all unreinforced masonry buildings, warning patrons of hazardous conditions in the event of an earthquake. This ordinance resulted in heated debate and strong opposition from building owners and tenants alike. In the wake of strong public opposition, the Council passed a compromise bill in January 25, 1977, which established a two-year program to survey and identify pre-1934 buildings and to revise the Earthquake Hazardous Buildings Ordinance.

The Building and Safety Committee appointed two outside committees for this purpose. The Technical Subcommittee was to devise a modified building safety code and devise a new ordinance. The Impact Evaluation Subcommittee was to assess the socioeconomic impact of the proposed ordinance on the City.

The new ordinance was drafted in November, 1978. The proposed Ordinance did not require building owners to post signs or to bring buildings up to current seismic safety standards. Instead buildings would have to meet 1940 standards under a phased compliance program which would extend over a ten year period. Owners of essential buildings required for emergency use would have to commence compliance as soon as building owners were notified. Owners of high risk buildings would have six months to begin compliance; owners of medium risk buildings would have to begin to comply within 18 months; and owners of low risk buildings have five years to begin compliance

with the Ordinance. The Department of Building and Safety completed its survey of pre-1934 buildings in November, 1979. A total of 7,876 unreinforced masonry buildings were located in the City.

Although the proposed Ordinance was less harsh than the one requiring the posting of signs, opposition to the proposed Ordinance was again based on economic factors. The Building and Safety Committee has made several efforts to address this issue. The Chief Legislative Analyst for the City identified potential sources of funding for the rehabilitation project and for the relocation of displaced tenants. In October, 1979, the Council approved funds for a private firm to study the cost estimates for rehabilitating an average building. In March, 1980, a bill was introduced in the State Legislature to help create low interest loans to small businessmen who would be required to upgrade their buildings. In addition, the Building and Safety Committee has been working closely with representatives of the financial community to develop a financial package for the City.

When the financial issue surrounding the proposed Ordinance is resolved the Ordinance will be presented to the City Council for a vote. This is expected to take place by the end of the year. While we can expect some opposition to the new law, members of the Building and Safety Committee are optimistic that the proposed Earthquake Hazardous Building Ordinance will pass and the City can embark on its ten year plan to mitigate the hazards of old unreinforced masonry buildings.

APPENDIX TO CHAPTER SEVEN

Summary

Major Revisions of the Ordinance

In 1975, the Building and Safety Department was requested by the City Council to prepare an ordinance to eliminate specified hazardous conditions in older motion picture theaters, totaling 43. Results:

1) Ordinance prepared.

2) B & S Committee held public hearings.

3) Dept. of B & S submitted final report to B & S Committee of City Council in April, 1975.

4) Ordinance returned to department of B & S to include other assembly uses in proposed ordinance. Total of buildings is now increased to 300 from 43.

5) The total of 300 buildings was under consideration as part of two public hearings by B & S Committee: a) 1-27-76; b) 4-20-76.

6) A final report of modified ordinance sent to B & S Committee of City Council. Approved 11-1-77.

7) On 12-9-76 Committee recommended posting of signs.

8) On 1-24-77 City Council adopted B & S Committee's report which called for: a) increase from 300 buildings to 14,000 to be surveyed over two years; b) a new ordinance to be drawn up without provision requiring posting of signs.

Index

2-23-73	Bradley and Russell (Council)--should adopt some seismic ordinance.
10-8-74	Council motion to draw up ordinance--theaters only--to bring up to structural, wiring, and fire codes (Snyder-Lorenzen motion).

10-8-74 Ordinance motion on file.

10-22-74 Continued for 90 days to consider and develop a plan of procedure.

1-15-75 R.J. Williams, General Manager of B & S, report to CC on new theater ordinance. Features:
1) Focus on pre-1933 masonry.
2) Owner must repair or demolish.
3) Repair within 1½ years of notice.
4) Enforced without additional personnel.
5) 100 theaters within LA; inspection within 1 year.

1-18-75 Ordinance draft on file, no. 91-0708.

3-15-75 Public hearings on "Inspection of Unreinforced Masonry Theaters," (Attendance list attached).
S.s. Naimark, sec. of B & S Commission--recommendations from hearing:
1) Not adopt as worded for theaters only.
2) Make applicable to all assembly buildings.
3) Priority for repair by structural need and building use.

4-23-75 R.J. Williams--B & S Comm. Restatement of 3-18 memo. Add Board recommendations:
1) Priorities established according to Seismic Safety Elements.
2) List of affected theaters forwarded to Cultural Heritage Board so uniques can be preserved.
3) 163 theaters in city; only 43 affected.
4) 1971 damage history of theaters.

1-27-76 1st public hearing on proposed ordinance. Features:
1) George W. Housner, Professor of Civil Engineering, Caltech, emphasized the danger of pre-1933 buildings if not repaired.
2) Determined by B & S department general manager that no repairs would have to be made on buildings constructed after 1939.
3) Letter read from LA Chamber of Commerce stating the prohibitive economic burden the ordinance would have.
4) Robert Selig, President of National Association of Theatre Owners, said the association feels the ordinance is discriminatory--they don't consider theaters to be prime sources of hazards.
5) Zack S. Beiser, Dr. of construction for _____ Theaters stated:
a) consideration be given to legal and fiscal responsibility for building correction.
b) he concurs with Chamber of Commerce that only earthquake hazards should be eliminated.
c) concurs with Selig that a priority approach should be taken to consider relative hazards of individual buildings.
6) Bonnie Riedel, Attorney for Pacific Theaters, Ben Mohi from Cent. Theaters and Joseph Bauer all oppose ordinance. They want compromises in upgrading buildings.
7) Roy M. Brewer, from International Alliance Theaters, stated employee concern.
8) Bennet Turner concerned with historical preservation.

9) Department stores are not considered assembly buildings, and not included in proposed ordinance.
10) Structural repair to be the greatest cost.
11) Comm. Better felt most of the points brought up by those opposed are reasonable. She also felt serious thought must be given to solution of building repair.
12) Visscher Boyd, architect, only concerned with structural safety--nothing more.
13) Ben Mohi considered dangers from broken glass very great.
14) Those pro ordinance began with Robert Haussler, Ben Schmid and Don Wiltse who unanimously favor ordinance. Haussler admitted cost of repair to be large, but no economic benefit to structural engineers.
15) John Kariotis, chair. of Seismology Committee of SEAC said assembly buildings of unreinforced masonry are most hazardous, but decision of repair is a political one.
16) Last comment before hearing close by Mr. Cooper, who emphasized economic hardship on theater owners since most of these buildings are hazardous.
17) Comm. Better concluded problem is serious, has socio-economic consequences. Also, all buildings should be included--not just one type. Only one type makes the ordinance discriminatory.

1-27-76 Revised proposed amendments on file after public hearing.

2-5-76 R.J. Williams, report to Floyd Kennedy, Legislative Assistant, on reduced risk to human life in event of a major earthquake
1) Ordinance revised after public hearing to include all assembly buildings--7100 persons.

2-10-76 Minutes of B & S Committee meeting. Features:
1) Proposed ordinance will affect 300 buildings, most in low-income areas.
2) Expensive for owner and would have socioeconomic consequences.
3) No federal or state funding yet available.
4) Tax incentives might make owners amenable to repairs; i.e., tax rebate or incentive system for owners.
5) Mayor should take initiative.

2-10-76 Anne Havell of B & S Committee wrote to Mayor Bradley informing him of necessity of implementing action with respect to above ordinance (some points in letter as minutes of 2-10). (Draft of letter on file).

3-16-76 R.J. Williams, General Manager of B & S Department, report to the committee on proposed code amendments for housing assembly occupancies. Recommendations from hearing of 1-27-76.
1) Item #1 revised.
2) Stricter structural revisions.
3) Requires compliance with LA building code in lieu of requiring compliance with all building and mechanical requirements.

3-23-76 Notice of second public hearing on proposed code amendments. Ordinance revised since first public hearing of 1-27-76. Second hearing to be held 4-20-76. Recommendations same as in R.J. Williams letter of 3-16-76.

4-20-76 Second public hearing. Points made:
1) James Slosson stated SSC favors proposal and recommends immediate action.
2) Bob Olson (SSC) says no funding available but resolution being proposed to urge federal funding. Also, he's aware of socio-economic problems.
3) R. Selig, National Theater Owners, said whole matter originated from minor incident in one theater. But theaters as a group are very safe. Also, he's concerned with the priority system whereby many buildings are not included in proposal.
4) Other theater owners opposed ordinance. Main objection: economic impact.
5) Nobel Owings, represents LA council of churches, requests inclusion of deadline extension.
6) Burnett Turner spoke for American Institute of Architects and State Historical Building Codes Advisory Board, asked for a historical preservation inclusion.
7) Tom Bilich of Counciler Cunningham's office urged committee to look into all possible aspects for funding. Also, most of the buildings are in lower socioeconomic "red line" areas and no city funding available. Money for repair very large.
8) Peter Moore-Kochlucs, pastor of United Methodist Church, said to change completion time to 5 years.
9) Ben Mohi, (Cent. Theater) said panic a factor and should consider ease of exit and panic control.
10) American Institute of Architects favors proposal if it contains historical provision.
11) Comm. Better feels funding must be pursued.
12) Comm. Dunne urges a letter to Mayor to pursue funding on federal, state, and local levels, but separate from ordinance.
13) Comm. Better against motion. She felt funding should be included in ordinance.
14) John Kariotis, Chairman of Seismology Comm. of SEAC, supports ordinance intact and asks that it be extended to all existing buildings, rather than those just housing occupants.
15) Ben Schmid (SEAC) suggests a sliding scale on hazard and occupancy be adopted in ordinance.
16) Charles Sigsway, architect representing Pacific Theaters Corp., thinks a public education program necessary. Also, said other buildings to be included.
17) Comm. to evaluate following points:
    a) compliance time.
    b) possible exemption of assembly buildings used ten hours or less.
    c) provision for historic buildings.
    d) reasonable compliance as a percentage of lateral force requirements.
18) Comm. Better advocates long range program to repair all unreinforced buildings.
19) Letter will be sent to the mayor urging funding investigation.

4-20-76 Revised proposed amendment (on file) after another public hearing.

4-20-76 Memo from Jerry Cremins, president of B & S Comm., to R.J. Williams, reporting major points of second public hearing.

4-20-76 Gloria Nickel writes to Mayor Bradley inquiring whether city has an effective plan to inform people who are occupying non-reinforced masonry buildings.

4-27-76 Minutes of meeting of B & S Comm. Discussed the following communication, to be transmitted to the mayor:
1) Considerable news media coverage on a possible major quake; LA has many buildings unable to withstand a major quake.
2) It is the opinion of recognized experts that these buildings would collapse, given a major quake.
3) Private loans not available. Many buildings are in low-income "red lined" areas.
4) B & S Comm. urges mayor to investigate and lobby for federal and/or state grants, low-interest loans, or tax incentives for building rehabilitation.

4-27-76 Letter based on major points from the minutes of B & S Comm. sent to Mayor Bradley and Anne Howell of Bradley's office.

5-4-76 R.J. Williams responds to the B & S Comm. as a result of second public hearing. B & S Department has evaluatdd and commented on following items:
1) historical buildings to be repaired according to different guidelines than other buildings.
2) in actual situations where strict application of the code is impractical, alternatives will be evaluated by the department and the appellate system is also available.
3) all unreinforced buildings and not just assemblies to be indicated in department's letter to council's B & S Comm.
4) Department of Building and Safety advocates a sliding scale for compliance deadlines based upon degrees of hazard. Out of 14,000 unreinforced masonry buildings in LA, the 300 assembly structures to be given priority.

5-10-76 Ken E. Layton, City Clerk, formally referred communication from the board of B & S Comm., requesting Council take all necessary steps to investigate governmental funding, was referred to B & S committee of city council.

5-11-76 Minutes of Commission meeting of Board of B & S Commissioner. Main points are those from R.J. Williams letter of 5-4-76.
Also on agenda:
1) Williams said department is planning to initiate a program for remaining unreinforced buildings as soon as the "matrix of hazard determination" is developed by the SEAC.
2) Comm. Better would like B & S Comm. to be reminded of the need for funding.
3) Comm. Dunne requested information on funding proposals from SSC.

4) Comm. Dunne requested Board secretary to arrange a tour to view several unreinforced masonry buildings, including some that have been repaired, and members of Housing Advisory and Appeal Board be invited.

5-11-76 Jerry Cremins to B & S Comm. of City Council stated the board supports proposed code amendments. Council urged to:
1) give favorable consideration to proposal.
2) seek a method to assist persons in financing rebuilding.

5-11-76 Another topic at Comm. meeting was in response to letter to the Mayor, from Gloria Nickel questioning if city has plan to warn occupants of unreinforced buildings.
1) Comm. Dunne has been questioned about this on other occasions.
2) General Manager R.J. Williams said if department posted signs, then building must be vacated.
3) Advice from City Attorney needed regarding liability of the city about warning occupants.

5-11-76 Jerry Cremins wrote to William Burge at city attorney's office about Gloria Nickel's letter and city's liability if signs are posted and no action taken to vacate buildings or correct them.
1) a legal representative requested to appear at comm. meeting on 6-15-76 to discuss above.

5-11-76 S.S. Naimark, secretary B & S Comm. to Bob Olson, SSC, requests that board be advised of any funding assistance resolutions for building owners.

5-14-76 Letter to Gerry Colina, Legislative Assistant of B & S Comm. of City Council from R.J. Williams on proposed code amendments. Features:
1) as a result of a City Council motion, Department of B & S was requested to prepare an ordinance about unreinforced masonry buildings.
    a) report submitted to comm. in final form in April 1975, after public hearings held by B & S Comm.
2) Ordinance attached in modified form after hearings of 1-27-76 and 4-20-76; the most important amendment from hearings was extension of time to obtain a permit from 1 to 2 years from date of order and from 2 to 4 years to comply.
3) 300 buildings out of 14,000 have priority because they are most dangerous.
4) a major earthquake could kill 12,000 and injure 48,000.
5) Original 43 theater buildings amended to approximately 300 assembly buildings.
6) total cost of enforcement of ordinance $150,000 for staff, etc.

5-14-76 Letter to Gerry Colina from R.J. Williams on reduction of human lives in event of a major quake. If ordinance adopted, hazard to lives would be reduced. Also,
1) Seismic Safety Plans require LA to develop a systematic time-phased program to start with most hazardous to life.
2) B & S Department, SEAC, SSC and members of local state educational institutions believe an ordinance should be developed to repair or abate all pre-1934 unreinforced buildings.

3) Committee to direct Department of B & S to conduct a separate study and develop necessary ordinances for the remaining 13,700 buildings in a systematic manner.

6-15-76 Minutes of B & S Comm. meeting. Topic, Gloria Nickel's letter (4-26-76) to Mayor Bradley. Points:
1) William Burge of city attorney's office states posting of signs could leave city vulnerable to numerous lawsuits of inverse condemnation and economic repercussion to owners. Also, posting would have some effect as a demolition order.
2) Burge said no liability on part of city for not inspecting or issuing orders.
3) F.V. Kroeger, Chief of Conservation Bureau, stated notifying owners or tenants could cause serious economic loss so that it's better to have a public education program to help people determine for themselves the better way to proceed.

6-15-76 Letter to Anne Howell of Mayor Bradley's office by Jerry Cremins transmitting Burge's summary and copy of Nickel's letter to Mayor.

6-15-76 Minutes of B & S Comm. meeting about letter from National Association of Theater Owners of Calif., Inc. Main points:
1) Board of B & S Comm's intent that this ordinance be designed as forerunner for proposed future legislation on unreinforced masonry buildings.

6-15-76 Jerry Cremins and Shirley Better wrote to Robert Selig of NTAC. Main points:
1) Selig's letter of 6-9-76 indicates he believes that board's action not accurately reflected in Williams report or Cremins' letter, specifically as they relate to Comm. Better's position on funding.
2) Better determined no discrepancy but stated Selig not incorrect in his assessment of her position on issue of funding. Problem, motion passed by comm. did not add funding resolution in the ordinance.
3) Actually funding resolution was included in a separate letter of 4-27 addressed to city council and mayor, expressing strong concern regarding funding.
4) Letter to B & S comm. of city council dated 5-76 was only to remind committee that board has previously taken a strong position on funding.

6-15-76 Jerry Cremins, president B & S Comm.
Re: Amendments to ordinance on assembly buildings.
Says Board of B & S Commission:
1) approved amendment.
2) concerned.
Intent of Board of B & S; ordinance is designed as "forerunner for proposed future legislation"

6-24-76 Burt Pines, City Attorney, from Gerry Colina (Legislative Analyst for B & S Commit.)
Asking for legal opinions on:
1) Government providing loans to churches and private enterprise for reinforcement.
2) Formulation of structural testing procedures.

7-12-76 To B & S from Ken Spiker, Legislative Analyst
Citing financial resources and additional sources of expertise (SSC)

10-76 Proposed code amendments for posting of earthquake-hazardous buildings on file.

10-18-76 Voided ordinance req. signs posted (on file)

11-1-76 Ordinance req. signs posted--approved (on file)

11-10-76 Chief Legislative Analyst's review of financial assistance for unreinforced masonry buildings. To Board of Grants administration.
Features:
1) Private loans difficult for the owners of these buildings to obtain.
2) If funding not available, severe socioeconomic consequences will occur.
3) Board of Grants asked to search possible grants with priority given to City buildings.
4) Commun. Develop. Block Grant may be a possible source of funds.
5) Congress. delegation to be called upon to pursue long term low-interest loans.
6) SSC planning to introduce legislation in area of tax incentives for rehabilitation in about one year's time.
a) legislation to combine ceiling on assessments.
7) NSF has established an advisory group of renowned experts to review and advise found. of Federal earthquake program.

11-17-76 CC started considering ordinance.
Cite history of ordinance.
Mentions USGS predicting major earthquake with "catastrophic results." Says theater owners, ministers, building owners expressed concern over cost.
Recommendation: passage of ordinance and propose staff and budget to implement.

12-9-76 B & S Comm. made formal recommendation b/o public display, referred back to them for further input.

12-16-76 Pines--legal opinion--ordinance is an exercise of city's police power for public health and safety.

12-18-76 B & S Committee report (also presented at city council on 1-24-77)
Features:
1) a review of past events.
2) determines to enlarge the scope of ordinance from 300 buildings to 14,000.

3) committee believes posting of the signs would have an economic consequence on building owners.
4) recommends two actions:
a) citywide survey over two years; total cost of personnel and expenses is app. $81,680.
b) a comprehensive earthquake safety ordinance under chairmanship of department of B & S be developed (preferably without posting of signs).

12-19-76 Report regarding economic impact of proposed earthquake ordinance by R.J. Williams, general manager, B & S Department.

12-22-76 Report regarding legal responsibility and liability of city's not taking steps to require building renovation (by Burt Pines).

1-14-77 Report regarding possibility of increased liability to owners (by Burt Pines).

1-24-77 City Council minutes. Approved ordinance of 11-1-76 not presented. B & S Committee's report approved. (See 12-18-76 for details of report).

1-25-77 Minutes. Wachs motion to reconsider B & S Comm. report adopted by council on 1-24-77, to amend action taken by council and provide a one-year program in lieu of a two-year program.

1-31-77 Mayor Bradley approves employing 10 positions in department of B & S to survey, identify, and catalog pre-1934 masonry buildings. $81,680 is approved from reserve fund.

2-15-77 David Cunningham to send form letter to various organizations asking for representation on code development committee.
1) Department to conduct survey of pre-1934 buildings over a two-year period.
2) Special Study Committee under chair of Dept. B & S to be appointed.
3) Planning Department of City of LA to review environmental impact.
4) City Council to request federal funding to assist in building rehabilitation.

2-27-77 Conference sponsored by the Los Angeles Board of Realtors meets to discuss the City's survey of pre-1934 buildings.

3-77 Mr. R.J. Williams, retired Manager of the Department of Building and Safety, appointed to Chair the Special Earthquake Safety Study Committee.

3-23-77 Organizational meeting of the Earthquake Safety Study Committee.

4-27-77 Santa Monica City Council orders structural survey of approximately 250 quake endangered buildings in that city.

5-77 Additional members added to Impact Evaluation Committee.

5-17-77 Los Angeles City Council votes 11 to 3 to eliminate funds for ten building inspectors.

5-18-77 General Manager of the Building and Safety Department, Walter Brugger, addressed City Council and stressed urgency of identifying unreinforced masonry buildings in the City. Council votes 9 to 5 to restore funds for building inspectors to the budget.

7-77 Councilman Cunningham's term as Chair of the Building and Safety Committee expires. Councilwoman Joy Picus becomes Chair of the Committee.

9-11-77 Burbank City Council launches a survey to identify an estimated 110 pre-1933 buildings in the City. The Council considered directing building owners to post signs.

10-6-77 City of Santa Monica begins its survey of pre-1933 buildings.

10-11-77 Robert Olsen, Executive Director of the State Seismic Safety Commission, estimates that there are between 100,000 and 200,000 unsafe buildings in California that would collapse in a major earthquake.

1-4-78 Santa Monica building inspectors near end of study of earthquake hazardous buildings. They identified 130 unreinforced buildings in the downtown area.

1-22-78 City of Burbank rejects an ordinance which would require posting of warning signs on hazardous buildings.

3-21-78 Six out of 249 buildings inspected in Santa Monica were found to be earthquake safe. Notices were sent to owners of the substandard buildings.

11-9-78 Preliminary draft of the Earthquake Hazard Reduction Ordinance approved by Earthquake Safety Study Committee.

12-78 Report of the Impact Evaluation Subcommittee of the Earthquake Safety Study Committee submits recommendations regarding the socio-economic effects of the proposed ordinance to the City Council.

12-14-78 Proposed Earthquake Hazardous Buildings Ordinance presented to the Building and Safety Committee.

1-5-79 Special Earthquake Safety Study Committee completes study of Earthquake Safety Ordinance. Department of Building and Safety recommends that the Building and Safety Committee approve the ordinance.

1-11-79 Environmental Review Committee begins study of the impacts of the proposed Ordinance on population and housing.

2-6-78 Building and Safety Committee begins public hearings on the proposed Ordinance.

4-4-79 Los Angeles City Council hears the proposed Ordinance.

4-24-79 Meeting of the Building and Safety Committee to discuss the possible ways of financing the rehabilitation of endangered buildings.

7-79 Councilwoman Joy Picus' term as Chair of the Building and Safety Committee expires. Councilman Hal Bernson becomes Chair of the Committee.

7-12-79 Department of Building and Safety proposed an amendment to the ordinance which would establish a non-compliance enforcement fee of $50 to alleviate the cost of additional inspection by the Department of Building and Safety.

7-23-79 Howard Jarvis, President of the Apartment Association of Los Angeles County, writes letters to apartment owners urging them to oppose proposed ordinance.

8-21-79 Building and Safety Committee meets to discuss ordinance.

9-18-79 Building and Safety Committee meets to discuss Environmental Impact Report.

9-79 Planning Department completes preliminary draft of the Environmental Impact Report.

9-24-79 Chief Legislative Analyst submits report to the Building and Safety Committee regarding possible funding sources for the rehabilitation of unreinforced masonry buildings.

9-25-79 Building and Safety Committee meeting.

10-79 City Council approves $430,000 grant to study the cost per square foot of reinforcing earthquake hazardous structures.

11-79 Department of Building and Safety completes its two-year survey identifying unreinforced masonry structures in the City of Los Angeles.

12-1-79 Building and Safety Committee holds a special public hearing to assist committee members in their decision-making responsibilities.

3-80 Assemblyman Mel Levine introduces a bill in the State Legislature to create a revolving low interest loan fund to assist small businessmen in their efforts to bring pre-1934 buildings into compliance with earthquake safety standards.

CHAPTER EIGHT

COMMUNITY RESISTANCE

During the study period, three issues emerged in Los Angeles County, each involving a major earthquake preparedness concern, either building safety or dam safety. In each of these instances, the proposed implementation of seismic safety legislation was met with overwhelming organized resistance. In each of the case studies used in this analysis, conflict emerged when major governmental agencies attempted to implement seismic safety legislation aimed at reducing the loss of life and property in the event of an earthquake of destructive magnitude. In each instance, conflict resulted in dramatic polarization, negating the possibility for compromise of negotiation. Because of the sustained conflict, the hazard-mitigation intent of the legislation was stalled.

One of the features which makes this type of conflict unique is that the resisters (i.e., the community contingent) were the intended beneficiaries of the legislation. The proposed actions were intended to reduce their exposure to earthquake dangers. Conflict was generated by the resistance of those whom the legislation was intended to protect; the resisters were the potential victims. In this chapter, we will examine the emergence and development of this particular type of conflict.

Case Studies

Data on the case studies used in the analysis were collected through extensive interviews with officials of the implementing agencies, local government representatives, and involved citizens. Several public and organ-

izational meetings in each community were attended, and an extensive written history was compiled for each community using media accounts, governmental communiques, organizational minutes, and court and public hearing transcripts.

Instances of this type of community conflict were found in three southern California cities: Littlerock, Los Angeles and Ventura. The case study of Littlerock, focusing on the issue of dam safety, was presented in Chapter 5 where a detailed account of the emergence of the Citizen's Committee to Save the Littlerock Dam was given. Chapter 7 dealt extensively with an account of the development of the Seismic Ordinance in the City of Los Angeles as it pertained to the problem of pre-1934 unreinforced masonry buildings. The Ventura case study will be presented in this chapter.

Ventura

In 1972, the Alquist-Priolo Geologic Hazard Zones Act was signed by California Governor Ronald Reagan and went into effect March 7, 1973. The purpose of this act is to provide for public safety in hazardous earthquake fault zones. The Act requires the delineation of potential damage areas called "Special Study Zones" (SSZ) along known active surface faults throughout California. Once these zones are established, local governments are required to withhold approval of construction permits within those zones until geologic investigation has determined that the site is not threatened by surface displacement from future faulting. The SSZ Act then requries the State Geologist to designate special study zones to encompass those faults or segments of faults deemed active and sufficiently well defined to constitute a potential hazard. During the past year, the State Geologist has concentrated efforts in the Los Angeles, Santa Barbara, and Ventura Counties. The result of this effort has been the establishment of the Ventura Fault as a proposed Special Studies Zone in Ventura County. This fault is located in the City of San Buenaventura 65 miles north of Los Angeles. The fault runs along the Ventura foothills into the ocean near the mouth of the Ventura River for a total length of approximately 31 miles.

According to one city administrator, the City of Ventura first became aware of the proposed zone through a newspaper article in late June, 1977. Apparently the United States Geological Survey sent out a news release to the local paper before the official letter reached the city from the Division of Mines and Geology. This seemed to cause some embarrassment for city officials because they were unable to answer the public inquiries caused by the article. The City Planner received formal notification of the proposed Ventura Fault Special Study Zone by letter from the State Geologist on June 28, 1977. The letter stated that the city had 90 days in which to submit comments for consideration in the

preparation of the official Special Study Zone Map for the Ventura Fault. Following a review period, the State Geologist would then issue an official map establishing the area as a Special Study Zone effective January 1, 1978.

Upon receipt of the state's preliminary review maps and the USGS maps, the city discovered that the Ventura Fault bisected two city projects, a proposed city water reservoir site, and a redevelopment project involving multi-residential units which was in the building permit issuance stage. Considering the establishment of the SSZ as a fait accompli, the City Planner hired a local geological consulting firm to carry out additional trenching at the two development sites in order to comply with the law. In late July, 1977, the consulting firm announced that they could not find any evidence of surface faulting at either the reservoir or the redevelopment site. Furthermore, after examining critical geologic features studied by USGS and the Division of Mines and Geology, they felt it was highly questionable that these features were derived from or associated with an active fault. During their investigation, a number of soil samples were collected. It was essential that these samples be Carbon-14 dated in order to strengthen the argument that no faulting was found. The consulting firm stated that more time was needed to carry out this process. In addition, they advised that further study and analysis be initiated before the Ventura Fault was officially declared hazardous.

In light of this evidence, city officials contacted the County Geologist to discuss with him the next step. He assured them that there was substantial evidence supporting the position that the Ventura Fault did exist and that it was a potentially active fault. Next they contacted the SSZ Project Director at the Division of Mines and Geology. According to one city administrator, the Project Director gave city officials the impression that he did not think very highly of the local geologists' report and gave little encouragement as to the likelihood of the State seriously considering further geologic data before officially establishing the Ventura Fault as a Special Study Zone.

At this point city officials more fully informed the City Countil about the contradictory evidence and issues involved in the establishement of the zone. It was strongly suggested that the City Council begin to view the State as an adversary in this instance rather than a friend of the city. It seems an atmosphere of conflict and hostility began to emerge as the city officials and council members began to realize that having any meaningful input into the SSZ decision making process was going to be more difficult than they had first anticipated. This was confirmed when the state's SSZ Project Director advised the City Planner that it was unlikely an extension of time would be arranged allowing the consulting firm adequate time to complete the Carbon-14 dating process essential to the city's argument that an active fault did not exist. It was also at this time that a local community organization addressed the City Countil in support of the Council's stand. They stated that if needed they would come to the aid of the Council and fight the state until the implementation plan was stopped.

Up until this point, public interest in the SSZ issue was relatively low. There had been only two articles in the local paper, both discussing the effect of the SSZ on the reservoir and the redevelopment projects. However,

on August 11 the local paper carried an article discussing new testing undertaken by the consulting firm at the redevelopment project. It was this article that first brought to the attention of the public the fact that the city was not necessarily going to accept the state's position and that, in fact, the city might challenge the state if the new tests proved negative. On September 1 an announcement appeared in the local paper stating that the City and County of Ventura would sponsor a public workshop to be held on September 8. The purpose of the workshop was to have a meeting between a representative from Division of Mines and Geology and the public in order to discuss the state's proposed action.

From the start, the meeting was plagued with problems. First, there was a misunderstanding between city officials and the representative from Mines and Geology as to the intent of the meeting. City officials advertised the meeting as an open community workship, although the representative believed it to be an educational function with city technical staff. Second, the meeting was attended by an overwhelming but totally unexpected crowd, resulting in a last-minute room change. The presentation itself was also plagued with problems. The Mines and Geology representative appeared very nervous and went through his presentation much too quickly for the audience to absorb the information. Also due to the misunderstanding of the intent of the meeting, his presentation was much too technical for a lay audience. When the audience began muttering and audibly criticizing the presentation, he became quite defensive. Although he tried to explain that the state's action was not arbitrary and that the decision to establish the SSZ involved a long review process, he again gave the impression that the state did not expect to receive any new information from the city that would affect whether the Ventura SSZ was officially established. He felt that the state had conclusive evidence supporting the existence of the fault and the fact that it was potentially active. This attitude only proved to increase the hostility and frustration of the audience, and turn the meeting into an inquisition. Questions to the Mines and Geology representative were repeated over and over. The audience was looking for hard facts and answers in absolute terms (e.g., when the next earthquake would occur; what does a potentially hazardous fault mean in terms of the everyday lives of the residents). Instead they were faced with probabilities and phrases like "this may lead us to believe" and "we feel." This led to frequent accusations that the state's evidence was unfounded, unclear, vague, and inferred. The audience felt that if the state could not or would not be clearer in regard to the existence and movement of the fault, how could the city have any chance of collecting evidence to refute the state's position. However, even in light of this, the majority of the hundred-plus citizens in attendance felt that a concerted effort by the city should be made to redefine or eliminate the proposed SSZ if evidence was found to contradict the state's claim.

On September 23, the Mayor of Ventura officially asked the State Geologist for a minimum one year extension to provide time to collect and analyze additional data before officially establishing the Ventura SSZ. Initially the Project Director for the SSZ's explained that legally there was no provision for providing such an extension. He said, however, that informally they would extend the date to November 4, although this would "squeeze" them because they had to make a decision by December 1, 1977. The State

Geologist, however, agreed to extend the date until March 1, 1978. According to a city administrator, this extension was granted because of political pressure applied by several state senators and representatives. He felt, however, that the state's attitude had not changed and that the extension was a token action in order to alleviate political pressure.

As the situation stands now, the city has stalled the implementation of the SSZ for approximately six months. The city is now preparing final reports to submit to the state by March 1. In the meantime, the water reservior project, the redevelopment project, and a portion of city land remain in limbo. The city plans to continue its fight to stop the implementation of the SSZ. However, they will have to wait until they hear the state's final decision before considering any further alternative action. It has been suggested that possibly the state would agree to a compromise plan establishing a smaller SSZ for the Ventura Fault than initially proposed. The city does not expect to hear about this until around June 1.

Issue Publics

In each of these instances, the "issue" of seismic safety was being debated by two principal groups, each attempting to influence policy decisions relating to the implementation of seismic safety legislation.

The faction supporting seismic safety was some type of governmental body, the State Department of Water Resources, the Department of Mines and Geology, or the Los Angeles City Council's Building and Safety Committee. In this respect, the government was trying to fulfill its role as "protector of the public good." In general, the agencies saw themselves taking positive steps to protect lives and property from a possible catastrophic earthquake which scientists were saying was inevitable within the next ten years or so. For example, the Department of Water Resources maintained that even if only one person were in jeopardy due to a collapsed dam, there would be sufficient reason for taking action (i.e., draining the reservoir). The Building and Safety Committee of the Los Angeles City Council pointed to the findings of the NOAA report which indicated that 1,500 buildings in Los Angeles would collapse and possibly as many as 12,000 people would die if a magnitude 7.5 to 8.3 earthquake were to occur on a weekday. In other words, the

agency arguments were based on the possible effects of a destructive earthquake if the hazard-reduction legislation were not implemented.

The anti-seismic safety faction consisted, rather surprisingly, of those people the proposed actions were intended to protect from earthquake hazards. They were the people who inhabited and used pre-1934 buildings, those who lived beneath an "unsafe" dam, and those who lived on top of a surface fault. These anti-seismic safety factions will be referred to as the "opposition collectivities."

The opposition collectivities, while not necessarily negating the public safety intentions underlying the legislation, focused on the certain negative effects implementation would have on their way of life. In Ventura, extensive revenue from the sale of an oceanfront redevelopment project was jeopardized by the proposed fault zone, since the Ventura Fault allegedly bisected the site. Also, the fault reportedly ran under schools, a hospital, the Sheriff's office, and a proposed reservoir. Local residents were concerned about their property values within the zone and the ability to decide freely what to do with that property.

In each of these instances, the negative effects of the legislation were seen as far outweighing any possible benefits. The opposition collectivities did not consider that the risk of an earthquake was as damaging to their way of life as were the effects that the "protective" legislation would have. Their general contention was that the consequences of the government's actions were a substantially greater threat to the local community than was the threat of a possible destructive earthquake. Earthquake threat was clearly not given priority over other lifestyle concerns and vested interests of these groups.

These opposition collectivities that opposed the seismic safety legislation emerged to combat what came to be seen as a "problem." They did not

interpret the government's proposed action as protecting their communities' interests, but as threatening the very existence of community life.

Problem Emergence and the Assessment of Acceptable Risk

Since the problem-emergence process is a central feature in the development of an "issue," we must determine how the actions of the well-intentioned government bodies come to be defined as a "problem" for these opposition collectivities. We propose that one major reason for the emergence of the identification of a problem by the opposition collectivities was their denial that they were really "living-at-risk." The assessment of risk by those on either side of the issue was dissimilar.

In order to understand the factors leading to differential assessment of acceptable risk, it is necessary to look at the process by which people define a situation as threatening or risky under conditions of extreme uncertainty.

Defining the situation. Researchers have suggested that the process of developing contradictory definitions of the same situation is primarily based on two components: personal factors, such as past experience and present perceptions of the environment; and social factors, such as perceptions of how others are responding and comparisons of one's information and perceptions with those of significant others.

Considering the personal factors in the risk assessment process, Kates (1962) has suggested that individuals are not easily able to conceptualize disasters that have not occurred or that they have not experienced before. People appear to need direct experience with misfortune to stimulate action. Kates (1962) and Burton and Kates (1964) both point to the fact that elaborate adjustments to cope with natural hazards often evolve only after repeated experience with the hazard. However, unlike many other natural disasters,

major earthquakes occur very infrequently in any specific locality. Most residents are not likely to be able to draw upon personal experience in evaluating the threat or risk.

An assessment of risk also involves individual perceptions of the environment. Several researchers (Fritz and Marks, 1954; Fritz, 1961; Wallace, 1956; Moore, 1964) have pointed to the fact that individuals tend to assess and interpret threat by referring to physical cues. One well-established finding is that it is frequently necessary for people to be able to observe changes in the local community's environment for a threat of an impending disaster to be taken seriously and for precautions to be initiated (Anderson, 1969). However, there are not observable external signs by which people can verify the threat of a coming quake as there are in other natural hazards such as floods, tornadoes, and hurricanes.

Although individual factors are important, social factors in the risk assessment process may be more influential. Since individual decision making does not take place in a vacuum, an individual's perceptions and subsequent action choices may be largely shaped or limited by interaction with others in one's social circle. For example, Fogelman and Parenton (1959) point out that as Hurricane Audrey got worse, "congregating behavior"--that is, discussions of what to do, where to go, etc.--increased, expanding from family members to neighbors to city officials. Moore et al's (1963) study confirmed the hypothesis that those who evacuate during the pre-disaster period are much more likely to have discussed the potential danger with others than those who do not evacuate. Similarly, Drabek (1969) found that the majority of his sample attempted to confirm evacuation requests, with nearly forty-five percent appealing to peers for such confirmation.

Defining and interpreting the risk situation, then, is a process in which the individual draws upon both personal and social factors in order to discriminate dangerous or threatening conditions from benign ones. However, Williams (1964), discussing the way people respond to warnings of disasters, has pointed out that most people would rather believe they are safe than in danger. If incoming information is not clear or is accompanied by contradictory information, the subsequent definition of the situation is likely to lead to a delay in action or to an assessment that action is not necessary. When we consider earthquakes, defining the situation as threatening or determining an acceptable level of risk is especially problematic. Since such a disaster agent has no observable precursors in the local environment and the science of prediction is still new, the situation facing the public can be characterized by a lack of explanatory definitions, cues, and expectations with which to guide behavior. Individuals, then, tend to organize their experiences and perceptions concerning the risk situation within overarching frameworks of knowledge.

The scientific and common sense frameworks. For each implementing agency, the type of evidence considered important and the methods used for assessing that evidence fall within a larger framework of knowledge--the scientific frame. The scientific frame, as it applies to the technological problem of seismic safety, provides the agencies' geologists and engineers with a common vocabulary and way of addressing theoretical problems; it gives them a cohesive in-group bond. These agency scientists think in terms of statistical probabilities of an event occurring, of confidence limits set around a probable occurrence, and of hypothetically structuring an event's occurrence contingent upon other factors.

The Department of Water Resources, when evaluating the structural stability of dams within California, computed a "maximum design earthquake" for each dam site. This maximum magnitude quake is determined by the dam's proximity to the San Andreas fault and the next nearest active fault. On the basis of past seismic activity on both of these faults and the design characteristics of the dam, a decision is made concerning the structure's ability to withstand the largest probable quake. Geologic theory, engineering principles, and statistical probability are tightly interwoven in the Department's evaluation of the dam's safety. The NOAA report, the basis for the Los Angeles City Council's attempt to implement a seismic ordinance, made extensive use of statistical probabilities and engineering principles in projecting extensive loss of life and property in case of a major earthquake. In Ventura, the California Division of Mines and Geology considered that any surface displacement along a fault in the last 11,000 years was sufficient evidence to indicate that the fault was "active." Since evidence of movement along the Ventura fault in the last 6,000 years was found by USGS geologists, this fault "clearly" was identified as active.

In general, the local residents, with the exception of a few physical science professionals among them, did not share this scientific frame for assessing potential risk. In fact, the scientific vocabulary and manner of qualifying statements in probabilistic terms gave the local residents the impression that the state's scientific representives weren't really certain about the risk involved.

The local residents used a "common sense" frame for assessing risk in their own communities from a future earthquake. This frame had two elements which were used by the locals as the core of their knowledge concerning potential earthquake-related risk, namely, visual assessment and past experience. Unlike the statistical probabilities used by the

implementing agencies, these two elements were used by the locals to determine whether or not a destructive earthquake would occur.

First, locals frequently relied on their visual assessment of the supposedly hazardous area in order to call the legitimacy of the scientific evaluations into question. For example, while interviewing the director of a property owners' association, one of the researchers was conducted out onto the street where several well-maintained and seemingly sturdy buildings were pointed out as being pre-1934 structures. As anyone could see, the director maintained, it would serve no purpose for such beautiful stone and brick buildings to be condemned and eventually destroyed, "leaving the downtown area looking like a bombed-out city after a war." During a recess at the April 18 court hearing on the Littlerock Dam, a Chamber of Commerce member turned to me and said, "Can you imagine! They want to tear down--not just shut down--our beautiful little dam. And they haven't even told us specifically why." During the Ventura community meeting, a few members of the audience wanted to know where to go so they could "see" the fault scarp which the Division of Mines and Geology contended was evidence of a possible future hazard for the surrounding structures. In this common sense frame, appearance took on an importance for the locals. It became a symbol which would be defended by those who lacked the conditional and theoretical explanations and understandings of the scientific frame.

Second, locals repeatedly referred to past experiences in recent history of earthquakes and their effects on the community. Whenever the topic of the dam's safety was brought up, Littlerock residents quickly recited a list of the areas' major earthquakes and how the dam had withstood them without any damage. At one of their early meetings, the Littlerock community group had a long-time resident display pictures of the dam's spillway being overtopped by two feet of water with no resulting failure.

For these citizens, the ability of the dam to withstand the worst earthquake and storms in current history was central to their belief concerning the dam's stability. History was composed of "actual" facts, no hypothetical suppositions. Similarly, a spokesman against the Seismic Ordinance maintained that within the city of Los Angeles only one person had been killed in the last twenty-five years due to the earthquake-caused partial collapse of a building. Frequent mention was also made of the collapse of a new earthquake-resistant hospital in Sylmar following the 1971 earthquake, while pre-1934 brick buildings two or three blocks away were not affected. Such examples from local history were used by the local residents to illustrate that the potential risk was not really as severe or imminent as the agencies contended.

Jointly, these two elements in the common sense frame were used as evidence for the local citizens' versions of reality, as the objective assessment of "real" hazards in their local communities. In light of specific issue-oriented common sense evidence, their assessment of risk from a future earthquake was low in each of the communities being studied. Thus, these elements in the common sense frame were used as evidence for the local citizens' versions of reality, as their assessments of "real" hazards in their communities. This resulted in an assessment quite divergent from that of the implementing agencies.

For the communities, however, risk was not limited to an assessment of earthquake danger or imminence. More important to the local residents was the discrimination between the <u>certain</u> effects of the agency's proposed actions and the <u>possible</u> effects of inaction.

While not necessarily negating the public safety intentions underlying the legislation, the locals focused on the <u>certain</u> effects implementation would have on their way of life. Littlerock residents, for example, pointed

out that most local growers would be forced to cease farming and desert their farms entirely because they could not afford to pay irrigation costs for water from the state's water project. They maintained that revocation actions would bring to an end a small town agricultural way of life by undermining the local economy and eroding the tax base for local schools. These effects, then, related to some kind of tangible damage to the community and its way of life.

More important, however, were the anticipated effects of implementation on community values and principles commonly held by the majority of local residents. By focusing on this anticipated symbolic damage, the community's assessment of acceptable risk was based on moral principles rather than on something more tangible (e.g., economic considerations).

As Coleman (1957: 10-11) has pointed out, issues that provide the initial basis of response in a controversy often undergo transformation as the controversy develops. One such transformation is the emergence of new issues unrelated to the original one(s). These new issues attract various resisters other than the specific economic interest groups that originally provided motivation for the conflict.

In reviewing the case studies, three new issues focusing on symbolic damage to the communities become apparent, providing a much broader base upon which conflict developed. First was the issue of damage to the community's image or sense of autonomy or pride--the idea of what the community stands for. For example, the spirit of independence and self-sufficiency became apparent in this explanation of why the citizens of Littlerock decided to fight the state's proposed actions:

> At the time that the State Department of Water Resources, through their safety of dams division, decided that this dam should be drained, causing anguish and privation to the community, certain citizens decided perhaps to test the idea that Americans are not responsive to government, but that government is supposed to be responsive to its citizens.

This populist sentiment certainly reflected the locals' belief in autonomy over their own affairs, defining the water district's responsibility for the dam's safety as a local matter. In this manner, Littlerock residents felt their small town way of life was being threatened by "big government's intervention."

Residents in all three communities felt they were being denied self-determination with respect to both individual and community use of property. This was an especially important issue in Los Angeles and Littlerock since the fate of historical structures and architecture styles were threatened. These concerns brought new groups into the conflict and presented new strategies for the resisters to use. For example, Littlerock residents began working to get the dam proclaimed a historical landmark.

Second, the issue arose concerning discriminatory treatment. Both Ventura and Littlerock residents felt their communities had been singled out because they were small municipalities rather than powerful metropolitan cities. Ventura residents, for instance, continually questioned why their community had been singled out, especially when there are other communities (i.e., Los Angeles) with histories of greater earthquake activity. In Littlerock, allegations frequently were voiced by CCSLD members concerning the seismically "unsafe" dams in metropolitan Los Angeles (Bouquet Canyon Dam was one frequently mentioned) whose owners were not being forced to expend large amounts of money for rehabilitation. Often this "unfair, discriminatory" treatment was laid at the feet of a new program trying to establish itself. It was felt that if DWR officials could make "an example" of Littlerock, they would then be able to force other dam owners to comply with DWR requirements to upgrade their dams. The decision to start with Littlerock was, according to the locals, a strategic move on the part of DWR officials.

On the other hand, Los Angeles residents most affected by the proposed Seismic Ordinance felt they were being discriminated against on the basis of economic and racial characteristics since the pre-1934 buildings were in the older, predominantly ethnic minority areas of the central city.

Finally, the idea of the predictability of life and the perpetuation of normal life patterns came into question. For example, for Littlerock residents to admit that their dam was unsafe would be to acknowledge the inability to carry on life as usual and to acknowledge that they had not planned or ordered their lives in the best possible way. This idea also applies to Ventura residents' acceptance of the Special Study Zone and Los Angeles residents' acceptance of the vulnerability of their older buildings. Along with this idea goes the acceptance of the inability to control events. In other words, the notion was raised that once standards were accepted and complied with, DWR might initiate new standards, the Los Angeles building codes might be revised, or the State Geologist might change the criteria used to establish the Special Study Zones, requiring the communities to comply with these new standards at a later date.

These new issues provided the needed motivation to attract additional resisters. They also helped create a bond among the resisters and helped solidify in-group opinion. This solidarity was based primarily on a shared assessment of the degree to which the community was at risk from a damaging earthquake and, concurrently, on an assessment of the effect the proposed implementation would have on the community's way of life. Local communities weighed the intent of the legislation against what they believed would be the certain effects, both tangible and symbolic, of implementation on their communities. In all three instances, the effects were seen as far outweighing any possible benefit. The general contention of the local residents was that the

consequences of implementation were a substantially greater threat to the local community than was the threat of a possible destructive earthquake. They were therefore willing to accept a greater degree of risk from a possible earthquake than were the implementing agencies.

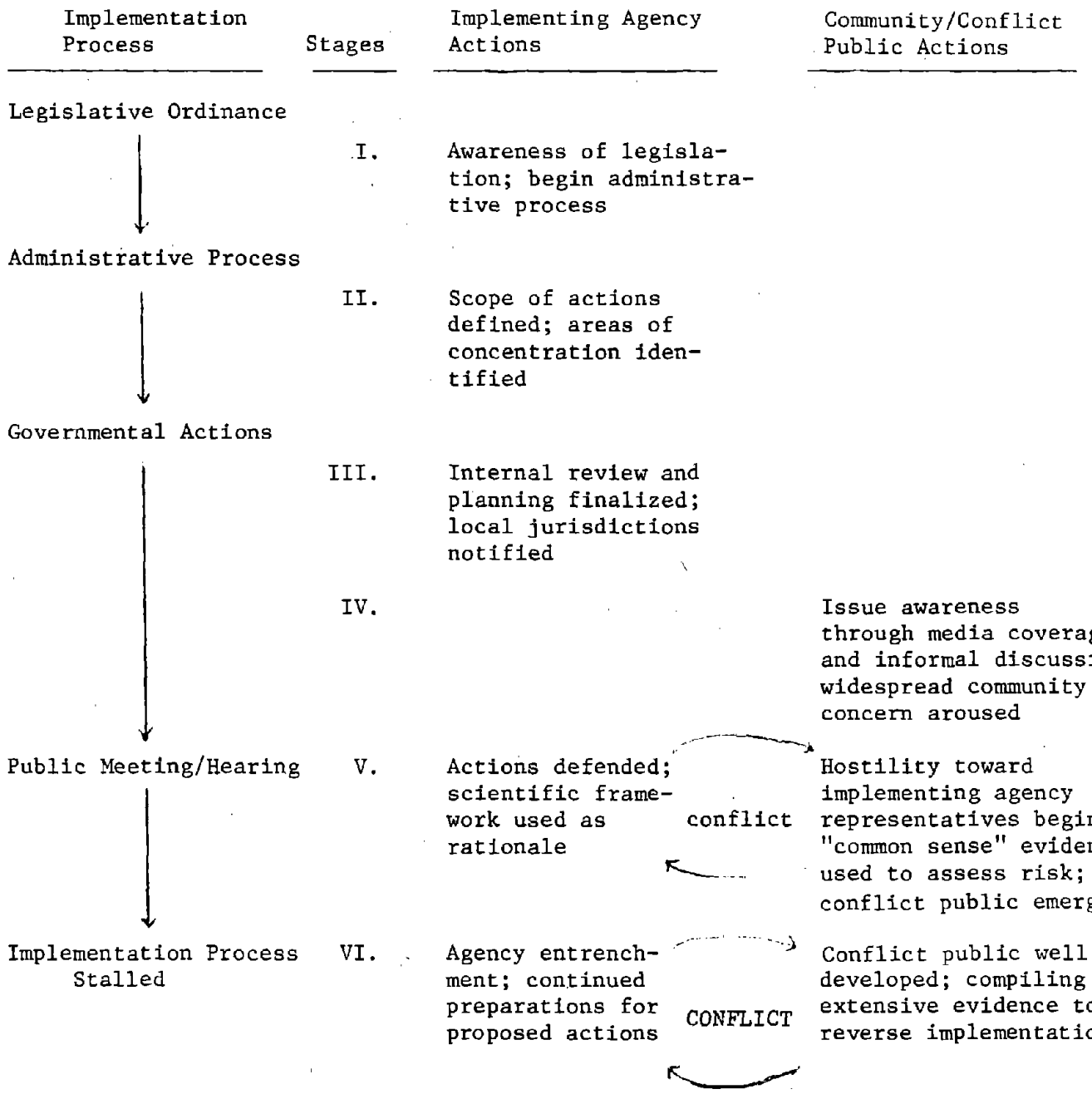
As the dynamics of this type of community-government conflict evolved, the goals of both the implementation agency and the local community were frustrated; the agencies felt they were being hindered in carrying out their duties, while the communities felt they were being coerced into a situation which would have adverse effects on their life styles.

A Model of Conflict Development

Another factor which helped solidify the bond between the various resisters was the development of a "we-they" sentiment. This feeling was initially created by the manner in which the local jurisdictions and community members were notified of the agencies' proposed actions. In each case, notification came suddenly and without warning; at least, that is how it was perceived by the community contingents. This produced an initial polarizing effect, strengthening the basis for an in-group/out-group tension between the implementing agencies and the local communities.

The way in which the local communities were notified of the proposed implementation actions suggests that the sequence by which events take place has a definite effect on the development of conflict. It is important, then, to look at the dynamics of how this conflict evolved and the interrelationship between the sequence of events and the developing perceptions of the conflict publics.

Figure 1 illustrates the development of a general pattern of conflict within the conflict publics.



THE PROCESS OF CONFLICT DEVELOPMENT

FIGURE 1

The implementation process begins when a hazard-mitigation ordinance is legislated and becomes effective. For the implementation agency, this begins a process in which its members become aware of the legislation and begin to take steps to ready the agency for the task of implementing the ordinance (Step 1).

However, it should not be assumed that agencies will actively attempt to carry out the intent of the new legislation immediately. In each instance, the acting agencies' special interests with respect to seismic safety were aroused by the developing concern within the scientific community about the imminence of a destructive quake. Just at the communities began to respond to the actions of the agencies, the agencies' actions were responses to pressures in their own milieu.

Although much of the current earthquake hazard-reduction legislation was proposed and passed after the 1971 San Fernando quake, the announcements of the developing ability to predict earthquakes in early 1976 refocused governmental attention on the implementation of the legislation. Activity seemed to shift from organizing and policymaking within the responsible agencies to actually applying the law at the local level. Especially with the passage of the Cranston bill in 1977, "implementation" became a central purpose toward which many state agencies (and some local ones) responsible for public safety began directing their efforts.

In addition to this general trend, the Department of Water Resources has experienced additional implementation pressures on its Safety of Dams Program due to recent national attention on inadequately constructed or maintained dams which collapsed. Although California's dam inspection program was being used as a model program for other states, there was a general feeling within the agency that their revocation action on the Littlerock Dam--the first such action taken by DWR--must be carried out or their whole program

would be jeopardized. The agencies, then, also had special interests which they were trying to promote.

As the administrative process develops, the implementation agency more fully defines the scope of actions to be taken and how these actions will affect the agency itself. It is at this point (Step II) that geographical areas of hazard are identified, studies to determine potential risk are initiated, and data are collected and analyzed. This stage of the process is usually quite lengthy, often taking several years to complete. Because the process is usually not observable by the target community, it often leads to the misunderstanding on the part of the locals that the implementing agency has acted hastily in singling out its local jurisdiction for implementation.

During the next stage in the implementation process, governmental actions are completed and first become known to the local jurisdiction. This stage includes two steps. In Step III the implementing agency internally reviews data collected, completes implementation plans, and officially notifies the local jurisdiction of proposed actions. At this time, local officials are informed of the plan to implement the ordinance and the amount of time they have to reply to the notification officially. Up to this point, the local community generally does not know that the hazard-mitigation ordinance will be applied to its community. The actions taken by the implementing agency in Steps I, II, and III have been primarily internal to the agency itself. Once the local officials are notified and news releases are sent to local newspapers, the local community begins to become an active agent in determining the extent of conflict and controversy surrounding the implementation process.

Since the communities were basically unaware of the intended action prior to its disclosure and since the agencies felt they had complied with and

were carrying out their responsibilities in an orderly and effecient manner, the communities studied came to perceive that they were being presented with a fait accompli. Considerable anger, particularly in Littlerock and Ventura, was expressed during the open community hearings or meetings because it was believed that the state agencies really didn't want any input from the citizens and would go ahead with their plans irrespective of reports and letters submitted from community groups and members. This sentiment was especially seen as a true reflection of the agencies' intentions since the date for initiating the proposed actions was only a few weeks or months after the original disclosure, making scientific or historical reports difficult to compile on short notice.

The agencies, however, saw their deadlines as entirely reasonable since they had been reviewing each case for a long time before taking their final disclosure action. At a court hearing and in private interviews, Department of Water Resources officials referred with pride to their extensive box of files on the unsafe features of the Littlerock Dam dating back fifty years. During a personal interview, a Mines and Geology program supervisor took great pains to illustrate evidence of surface faulting on their trenching maps of the Ventura Fault. The implementing agencies assumed that they had thoroughly reviewed the available evidence and had rationally come to their decision to implement a hazard-reduction plan. Because of this internal process (and some governmental pressures to carry out this type of legislation), the agencies did, in fact, perceive that their decision was final and that only a short-term deadline was necessary for the local governments to prepare for changes to be brought about by implementation.

It is during Step IV that the community first becomes aware of the issues involved through media coverage and informal discussion. It is at this point that widespread community concern becomes aroused. A public

meeting or hearing is usually held in order to clarify the issues and explain the legislation to the public. At this point, the communities' special interest groups began to sense an "all-clear-full-steam-ahead" attitude on the part of the implementing agencies. These initial resisters then began to perceive an immediate need to organize and take action. For example, one Littlerock resident said that after the revocation hearing, he and his friends realized that if someone didn't do something soon, the damage to their community due to the draining of the dam would be irreversible.

It is during this early stage in the disclosure process that the special interest groups are instrumental in bringing about the shared sense of emergency. It is through the organizational actions of these core resisters that common forums (e.g., a community meeting, an educational workshop, a well-attended City Council meeting) are produced. These forums provide places where community residents can learn about the issues facing the community and provide an interactive setting in which residents can construct definitions of the situation.

In the ensuing informal discussions, organizational activities, and general community meetings, the nature of the disclosures produced the widely shared sentiment--"How can <u>they</u> do that to us?"--forming an initial cohesive link among community residents. As Simmel (1955:98-99) first pointed out, conflict has a cohesive function in that a "synthetic strength" is produced which molds people together who previously may not have much connection.

In Step V, organized conflict and hostility begin to emerge between the implementing agency and the community. In Ventura, city agencies and the City Council, spearheaded by the Planning Department, coordinated their efforts to compile evidence disclaiming the fault's existence. It was the Planning Department which urged the City Countil to see the Division of Mines and

Geology in adversary terms and which arranged to hold a public "workshop" to inform the general community about the proposed actions. It was after their presentation to the City Council that a local homeowner's group pledged its support to the city in combatting the proposed actions.

In Los Angeles, the coalition of those opposing the Seismic Ordinance shifted and enlarged as the definition what constituted an earthquake-hazardous building changed in different versions of the Ordinance. In the first drafts, when the Ordinance included only theaters housed in pre-1934 buildings, theater owners' groups, projectionist unions, and historical societies concerned with early examples of Los Angeles architecture were the major members of the coalition against the Ordinance. As the Ordinance was revised in later drafts to include all pre-1934 buildings, church groups, insurance companies, apartment owners, and Council representatives from the affected districts joined the coalition. It was not until this time, late in 1976, that the proposed Ordinance became highly visible to the general community. Newspapers and television had coverage of the clamorous, emotion-laden City Council meetings, and the Apartment Association appealed to renters to make themselves heard by attending City Council meetings to defeat the Ordinance. Unlike the coalitions in Ventura and Littlerock, these special interest groups do not seem to have formed a coalition in the traditional sense, that is, as sets of persons, some whom have shared prior relations, acting together to achieve a particular goal (Boissevian, 1974). They seemed to lack any overarching coordinating ties among themselves enabling them to achieve their goal (i.e., to defeat the Ordinance). However, some organizational concessions toward neutrality were obviously made between pairs of groups in order to work together; ostensibly the theater owners and the projectionist unions have had labor-management disputes, the apartment association and insurance groups have encountered each other over rate increases, and apartment owners and

renters have not seen eye to eye on rent hikes.

The resulting conflict is circular in nature, intensified by the interaction between the two groups. Within each community, concern quickly became focused on investigating various alternatives which could be taken by the locals to combat the proposed actions by the state agencies.

The imminence of the short-term date for initiating the proposed actions, then, provided a catalyst for taking collective action (or, at least, for searching for action alternatives). However, as the consequences of the proposed actions began to develop and to be perceived as imminent threats--threats which would affect a majority of the communities in differing adverse ways--resistance and conflict reached their peaks.

In Step VI, the implementation process tends to stall. The implementing agency became more entrenched in its determination to implement the hazard-mitigation ordinance in each particular local jurisdiction. The agency continued its preparation for its proposed actions, giving little hope to the community that there was any action they could take to reverse the process. In turn, the community resisters became more organized, exerting much energy in compiling extensive evidence to reverse the implementation process. They came to view the implementing agency as an adversary threatening the life style of the community rather than as an agency working on their behalf.

Also at this stage, the locals began to challenge the "right and fairness" of the proposed actions and, in turn, began questioning the implementing agency's authority to take action. As Coleman (1957:17) has stated, the in-group/out-group controversy is often due to differing expectations about authority. In the case studies used, the locals did not question the intent of the seismic safety legislation, but its consequences. This was especially true since a destructive earthquake was believed to be a low probability event. The evolution of these sentiments resulted in polarization

with the locals totally rejecting the "right" or authority of the implementing agencies to take such "harmful" actions. In Ventura, for instance, the community proceeded with both city projects totally ignoring the state's actions. In Littlerock, the community did not take any action to upgrade the dam while the CCSLD awaited the final EIR hearing. To date, none of the implementing agencies has accepted this challenge to its authority. Rather, they have let the issue lapse through various actions that delay the final decision.

The extent to which the community was mobilized largely depended upon the degree to which assessments of risk and sentiments of community disruption were shared. The process through which the proposed actions were disclosed allows us to reject the notion that only economically threatened groups would engage in resistance activities. Instead, as common perceptions of risk and damage became disseminated in these communities, new (but related) issues arose, attracting a multiplicity of participants. Because of the circularity of the conflict process, the interests and sentiments of both factions of the conflict public became further entrenched, until negotiation and compromise became impossible.

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APPENDIX A

INTERVIEW SCHEDULE FOR PRELIMINARY INFORMANTS

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Respondent's Name: _____

ID Number: _____

Phone Number: _____

GROUP

1. Group Name: _____

2. Location of Meeting or Group Headquarters: _____

_____

3. Meeting Organizer or Additional Contact: _____

_____

4. Date of Meeting: _____

5. Type of Meeting: _____

_____

(Is R a Group Member) _____

6. How Did R Find Out About Meeting: _____

_____

_____

7. R's Recollection of Questions/Concerns/Subjects Covered: _____

_____

_____

_____

_____

8. Comments:

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APPENDIX B

INTERVIEW SCHEDULES FOR MEETING INFORMANTS

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INTERVIEW SCHEDULE (INITIAL CONTACT)

Contact: _____

Phone Number: _____

Group: _____

Meeting Date: _____

Source: _____

1. Did you organize this meeting?
   A. (If not) Who did? Phone number?
   B. Contact's affiliation with group.
2. Why was this type of meeting held (at this particular time)?
   A. Whose decision was this?
   B. Was any discussion among members held at that time?
3. What were some of the topics discussed at the meeting?
   A. Were earthquake predictions mentioned?
   B. If so, can you recall what was said about them?
   C. Were there any particular things people wanted to know about? What kinds of questions were asked?
   D. Any indications of how concerned (the group members) are/were about the possibility of a coming earthquake?
4. Did(this group) discuss what could be done by the group to prepare for a coming quake?
   A. Has (this group) done anything as a whole?
5. Approximately how many people attended this meeting?
   A. Who came to the meeting? Was it just for (group members) or more open?
   B. How were people told that this meeting was going to be held?
   C. (If open) How many people from outside (the sponsoring group) attended? (If appropriate) Have any of (the outsiders) become active in your (group)?
6. Have there been any more meetings of (this group)? Any ongoing informal discussions?
   A. (If so) What is the group doing now? What topics are being discussed? How many people are involved?

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APPENDIX C

CODEBOOK FOR MEETING INFORMANTS' INTERVIEWS

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COLUMNS	VARIABLE NAMES	QUESTIONS	CODES
1-3	ID		Precoded
4-5	SOURCE1	Source of info on group? (1st response)	01 - Questionnaire 02 - Civil Defense 03 - CHEC 04 - Red Cross 05 - Media 06 - Informant
6-7	SOURCE2	(2nd response)	Same list as SOURCE1
8-11	DATE	Date of meeting	Code month and year (eg - 0776) If only have partial info: 1576 - 1st quarter 1976 3076 - 2nd quarter 4576 - 3rd quarter 6076 - 4th quarter
12-15	INDATE	Date of interview	Same as list as DATE
16	GRPTYPE	Type of group sponsoring meeting	1 - Neighborhood/Residential (informal or semi-formal 2 - Neighborhood/ Residential (informal) 3 - Civic, Social Service 4 - Churches (and affiliated groups) 5 - Schools (and affiliated groups) 6 - Occupational groups 7 - Community/Open meetings
17	LEVEL	If a School: What level?	1 - Pre-school 2 - Elementary 3 - Junior or High 4 - College 5 - Adult school
18	WHOSKOL1	If a School: Who was meeting presented for? (1st response)	1 - Faculty only 2 - Students (children) 3 - Students (adults, college) 4 - Parents 5 - Open to community
19	WHOSKOL2	(2nd response)	Same list as WHOSKOL1

COLUMNS	VARIABLE NAMES	QUESTIONS	CODES
20	HOSP	In an Occupational group: A Hospital?	1 - Yes 2 - No
21	PTT	If an Occupational group: Pacific Tel?	1 - Yes 2 - No
22	REASON1	Reason for holding the meeting? (1st mention)	1 - Legally required (need to develop plan) 2 - Preparedness is organizational objective 3 - Needed speaker to fill slot 4 - Concern within group 5 - Professional interest
23	REASON2	(2nd meeting)	Same list as REASON1
24	PURPOSE1	Purpose of holding meeting in terms of use of the information (1st mention)	1 - Informational distribution 2 - Plan prepartation 3 - Organizational stretegy (unrelated to earthquake topics; ie, use of meeting for other purposes) 4 - Program or issue promotion
25	PURPOSE2	(2nd mention)	Same list as PURPOSE1
26	ORIENT	Information was oriented toward what type of audience?	1 - Individual use 2 - Organizational use 3 - Both
27	PREDS	Were earthquake precitions discussed?	1 - Yes 2 - No
28	INFOKIND	What kind of information was generally presented?	1 - Preparedness 2 - Scientific or prediction
29	INVOLVE	Extent of group's involvement in the topic	1 - One-shot only 2 - Short-term 3 - Long-term interest
30-31	NUMBER	Approximate number of people attending meeting	01 - Less than 15 02 - 16-30 03 - 31-45 04 - 46-60 05 - 61-75 06 - 76-90 07 - 91-199 08 - 200-299 09 - 300-399 10 - Over 400

COLUMNS	VARIABLE NAMES	QUESTIONS	CODES
32-34	CITY	Location of Meeting	Use roster of cities
35	OPEN?	Was meeting open to non-members?	1 - Yes 2 - No
36	ADVERTZ1	Was was meeting advertized? (1st mention)	1 - Newsletter 2 - Bulletins 3 - Newspaper 4 - Radio 5 - Television 6 - Word-of-mouth 7 - Not advertized
37	ADVERTZ2	(2nd mention)	Same list as ADVERTZ1
38	ADVERTZ3	(3rd mention)	Same list as ADVERTZ1
39	AGE	Relative ages of attendees	1 - Children 2 - Senior citizens (primarily) 3 - Adults (mixed) 4 - College-aged students 5 - Children and adults
40	SEX	Sex of participants	1 - Primarily female 2 - Primarily male 3 - Both
41	ORGINT?	Was meeting organizer interviewed?	1 - Yes 2 - No
42	ORGINTY	Why wasn't meeting organizer interviewed?	1 - Not available 2 - Did not attend meeting 3 - Teacher or supervisor who only arranged meeting
43	NEWUNIT?	Did group add a new unit to accomodate earthquake related topic?	1 - Yes 2 - No
44	EXIST?	Is group's only reason for existence related to earthquake-topic?	1 - Yes 2 - No
45	OTHRMTG	Did leader/org. attend an earlier earthquake meeting?	1 - Yes 2 - No 3 - DK
46-48	OTHRNO	ID number of that earlier meeting	Code actual ID # 0 - Not applicable

COLUMNS	VARIABLE NAMES	QUESTIONS	CODES
49	NEWMTG	Did this meeting lead to another?	1 - Yes 2 - No 8 - DK
50-52	NEWNO	ID number of that follow-up meeting.	Code actual ID # 0 - Not applicable
53	EVALUTN	What is the evaluation of the speaker's presentation?	1 - Very good 2 - Good 3 - Fair 4 - Poor 5 - Didn't say 8 - Don't know
54	PREDMENT	Were predictions mentioned as a motivation for this meeting?	1 - Yes 2 - No 3 - Not mentioned 4 - No, but became important during meeting 8 - DK
55	EQORDIS	Was information primarily on earthquake or general disaster?	1 - Earthquake primarily 2 - Disaster primarily 3 - Both 4 - DK
56	ATTEND	Was attendance voluntary or mandatory?	1 - Voluntary 2 - Mandatory 8 - DK
57	IDEA	Did leader/org get idea to have meeting by talking to others?	1 - Yes 2 - No 8 - DK
58	WHO IDEA1	Who did leader/org talk to? (1st response)	1 - Adults in household 2 - Children in household 3 - Coworkers 4 - Friends or neighbors 5 - School group 6 - Other group members 7 - Everybody 8 - DK 0 - Not applicable
59	WHO IDEA2	(2nd response)	Same list as WHO IDEA1
60	WHO IDEA2	(3rd response)	Same list as WHO IDEA1
61	SPEAKER	Was an outside speaker used?	1 - Yes 2 - No 3 - DK

COLUMNS	VARIABLE NAMES	QUESTIONS	CODES
62	SPKOUT1	Who was outside speaker? (1st response)	1 - Civil Defense 2 - Sheriff or Police 3 - Fire 4 - Engineer or Architect 5 - Scientist 6 - CHEC 7 - Other 8 - DK 0 - Not applicable
63	SPKOUT2	(2nd response)	Same list as SPKOUT1
64	SPKOUT3	(3rd response)	Same list as SPKOUT1
65	SPKOUT4	(4th response)	Same list as SPKOUT1
66	SPKIN1	If speaker from the group, who was speaker? (1st response)	1 - Regular member 2 - Disaster or safety officer 3 - Other supervisor or administrator 8 - DK 0 - No speaker from group
67	SPKIN2	(2nd response)	Same list as SPKIN1
68	SPKIN3	(3rd response)	Same list as SPKIN1
69	EQKNOW	Does someone in group have special knowledge or information about earthquakes?	1 - Yes 8 - DK
70	SKOLINFO	If group was a school group, was information sent home to parents?	1 - Yes 2 - No 8 - DK 9 - Not applicable