

**Factors Affecting Public Acceptance of Flood Insurance in Larimer
and Weld Counties**

By

Joel W. James, Joel B. Kreger, and R. Dru



Colorado Water

Resources Research Institute

Information Series No. 24

**Colorado
State
University**

FACTORS AFFECTING
PUBLIC ACCEPTANCE
OF FLOOD INSURANCE IN
LARIMER AND WELD COUNTIES, COLORADO

By

Joel W. James
Joel B. Kreger
R. Dru Barrineau

Submitted to

The Water Resources Planning Fellowship
Steering Committee

Henry P. Caulfield, Professor, Department of Political Science
Norman A. Evans, Director, Environmental Resources Center
Burnell F. Held, Professor, Department of Recreation Resources
James R. Meiman, Dean, Graduate School
Kenneth C. Nobe, Chairman, Department of Political Science
Everett V. Richardson, Professor, Department of Civil Engineering

Colorado State University

In fulfillment of requirements
for a Special Study Project in Planning

August, 1977

TABLE OF CONTENTS

	Page
Acknowledgments	ii
 Section	
I INTRODUCTION	1
II THE FLOOD INSURANCE PROGRAM PAST AND PRESENT	3
Evolution of the Program	3
The Federal Insurance Act of 1956	3
The National Flood Insurance Act of 1968	4
The Flood Disaster Protection Act of 1973	5
Present Status of the Program	6
Required Land Use and Control Measures	6
Flood Insurance Rates	7
Establishment of Premium Rates	9
Present Sales Data	14
III IMPLICATIONS FROM PREVIOUS STUDIES INDICATING THE NECESSITY OF ADDITIONAL INFORMATION FROM ANOTHER PERSPECTIVE TO DETER- MINE WHY MORE FLOOD INSURANCE HAS NOT BEEN SOLD	15
IV PREPARATION OF THE QUESTIONNAIRE	19
V RESULTS OF THE QUESTIONNAIRE	25
Specific Questions	25
General Questions	28
VI INTERPRETATION OF RESULTS FROM QUESTIONNAIRE AND MULTIPLE REGRESSION ANALYSIS	31
VII RECOMMENDATIONS BASED UPON RESULTS	37
Public Information Program	37
Agent Information Program	42
VIII CONCLUSIONS	47

REFERENCES

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	Questionnaire Presented to Agents	20
2	Newspaper Advertisement by Independent Insurers of Denver, Inc.	39
3	Public Information Brochure by a Large Insurance Company . . .	40
4	What Colorado Residents Should Know about Flood Insurance by HUD . . . ,	41
5	Table of Contents from NFIA Flood Insurance Manual	43
6	How Flood Insurance Policies Are Renewed - by NFIA	44
7	Listing of toll-free numbers for policy information and question clarification - by NFIA	45
8	How to Read Flood Hazard Boundary Maps - by FIA	46

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Limits of Coverage	11
2	Emergency Program - Subsidized Policy Rates	11
3	FIA Elevation Rate Table II Section A - One to Four Family Residential Structure - One Story	12
4	FIA Elevation Rate Table II Section C - Residential Contents	13
5	Flood Insurance Policies in Effect in Colorado Through 31 March 1977	14

ACKNOWLEDGMENTS

The authors gratefully acknowledge the cooperation and participation of the insurance agents interviewed in the Ft. Collins, Greeley, and Loveland areas. Without their input this report would not exist. We would especially like to thank: Dr. Harold C. Cochrane, Assistant Professor of Economics, CSU; Sam Brugger, FIA (Washington); Ruth Fuller and Ruby Flynn, CNA Insurance Company; Jerome Olsen, FIA, Denver, Colorado; County Senior Planner Rex Burns; Dr. Robert Tueting, Assistant Professor of Finance, CSU; George Bennett, NFIA (Arlington, Virginia); Dr. Howard Kunreuther, Wharton School of Business; Robert Powell, Galyardt and Harvey Insurance Agency; and Robin Payne, Payne Insurance Company.

We also appreciate the guidance of our graduate committee. The committee consists of Norman Evans, Director of the Environmental Resources Center and Chairman of the Committee; Henry Caulfield, Professor of Political Science; James Meiman, Dean of the Graduate School; Kenneth Nobe, Chairman of the Department of Economics; and Everett Richardson, Professor of Civil Engineering.

I. INTRODUCTION

It is the intent of this study to examine several factors which influence the selling of flood insurance, and to make recommendations based on the findings of this study available to policy makers, the insurance industry and other persons interested in improving the National Flood Insurance Program.

Interest in this subject stemmed from the fact that only one flood insurance policy was in effect in the Big Thompson Canyon, Larimer County, Colorado, at the time of the Big Thompson Flood of July, 1976. In the aftermath of this disaster the apparent lack of participation in the flood insurance program by the residents of Larimer-Weld Counties resulted in much speculation as to the causes of the non-participation. In other parts of the country where flood threat is more apparent such as from hurricanes, the program has been readily accepted. It is the opinion of the authors of this report that the program is most beneficial and should be further expanded in Larimer and Weld Counties through education of the public and the sales agents.

To draw any conclusions concerning the sale of flood insurance, two scales would need to be examined: the demand side (buyers) and the supply side (sellers). A recent study by Howard M. Whittington, et al., entitled "Implementation of the National Flood Insurance Program in Larimer County, Colorado" was mainly concerned with the overall program. A study by Dr. Howard Kunreuther, et al., entitled "Limited Knowledge and Insurance Protection: Implications for Natural Hazard Policy" went a step further, by examining factors which induce individuals to protect themselves voluntarily against the consequences of low probability events such as floods or earthquakes (the demand side). Dr. Kunreuther's report also pointed out the need

to examine the supply side of flood insurance. Therefore, it was the authors' decision to examine the sellers' side of the flood insurance program or several factors which influence insurance agents in the selling of flood insurance.

Larimer and Weld Counties were chosen as study areas due to their close proximity and the data which existed as a result of the most recent Big Thompson Flood.

A random sample of 29 insurance agents in the Ft. Collins, Greeley, and Loveland areas was chosen for the study. These agents represent approximately 40 percent of the total property and casualty agents in Larimer and Weld Counties. Fourteen of the agents interviewed attended a National Flood Insurance Association affiliated workshop. A questionnaire was prepared to determine factors which influence the selling of flood insurance. The results of the interviews are compiled along with a multiple regression analysis of the data from the questionnaires. Specific recommendations are made which could possibly improve the flood insurance program.

It is not the intent of this study to place blame on any one individual or group involved in the National Flood Insurance Program, but merely to improve an existing institution with which we all must work.

II. THE FLOOD INSURANCE PROGRAM PAST AND PRESENT

Past attempts to enact an effective federal flood control program had been like a heroic effort to curb fires by putting them out with modern equipment while paying little attention to what causes the fires. Engineering measures to curb floods were effective in many places, yet the national toll of flood losses continued to mount as more hazard areas were occupied and little attention was paid to the extent to which increases in flood damage might be warranted by the returns to the nation.

EVOLUTION OF THE PROGRAM

The Federal Flood Insurance Act of 1956

With the increase in the occurrence of flood disasters the federal, state and local responsibilities for relief became tremendous. In 1950 the state and local governments received assistance from the federal government to carry out the necessary flood relief operations.

The floods of 1951 were devastating and President Truman spoke to the insurance industry about possibilities of offering Flood Insurance. Because of the nature of the disaster, insurance companies did not feel such a program would be feasible since the people affected by a flood would buy insurance while persons residing out of a flood plain would not. Thus, there would be no way to spread the risk.

The floods of 1955 and 1956 on the East Coast precipitated congressional action from several areas. The Eisenhower administration, Congress and the general public were all in favor of some type of flood insurance; and in 1956 Congress passed the Federal Flood Insurance Act of 1956. This was the first of several attempts by the federal government to provide low-cost flood

insurance to homeowners through a federally subsidized program. The program failed when the House refused to appropriate funds to implement it. The rate setting procedure was not workable and no mechanism was established to coordinate state and federal activities. These problems along with other inadequacies resulted in the failure of the program. After this failure, attempts were made to revive flood insurance legislation in 1962, 1963 and 1965.

The National Flood Insurance Act of 1968

The administrative policy of dealing with flood loss reduction changed with President Johnson's message and accompanying report and executive order to the Congress in August 1966. Under the new policy, federal flood protection projects would continue to be built where economically feasible, but the government agencies were to also work with other federal, state and local agencies in encouraging wiser use of flood plains. Also it was determined that it was hydrologically possible to provide an insurance program with flood probabilities on which to base rates, where in previous attempts to establish a rate scheme, rates were based on the average annual flood damages. Thus the two major problems with the 1956 Act as cited by the House had been solved. There was a policy for mitigation of future flood damage and the rates for the insurance were to be established in a more acceptable manner.

The Department of Housing and Urban Development (HUD) report submitted by President Johnson entitled "Insurance and Other Programs for Financial Assistance to Flood Victims" outlined a program of flood insurance of a private nature but with continued participation by the federal government. The report delegated the writing of the insurance to the private company with the federal government responsible for providing incentives. The HUD Report also noted the necessity for land use planning to limit future losses.

The National Flood Insurance Act of 1968 (Title XIII of HUD Act) "was designed to provide subsidized flood insurance and to reduce long-term flood damage through the use of land use and control measures."

The 1968 Act stated that after June 30, 1970, no new flood insurance would be granted to a flood-prone area unless a flood plain management plan had been adopted.

The National Flood Insurers Association (NFIA) was instrumental in the success of the Act. NFIA was responsible for the dissemination of information about the flood insurance program. By the end of 1969 only four communities had adopted management practices which made them eligible for federal flood insurance; with over 7,000 other flood-prone communities not in the program much work was needed.

In August 1969 it was publicized that after Hurricane Camille only one devastated community was eligible for flood insurance. Consequently the 1969 amendment to the Act created an emergency insurance program. This amendment sought to enable participation in the program prior to the establishment of accurate flood hazard boundaries, which require several months to determine. The change in the wording in the Act from permanent land use and control measures to adequate land use and control measures allowed easier compliance with the Act. The emergency program assisted many communities in attaining eligibility but there were still problems associated with providing coverage.

The failures with the previous flood insurance programs was the absence of some mandatory concepts.

The Flood Disaster Protection Act of 1973

The worst floods in the nation's history occurred in 1972. The vast majority of communities involved did not have flood insurance. On December 31, 1973, President Nixon signed into law (PL93-213) to "expand the national

flood insurance program and require participation by designated flood-prone communities and property owners as a condition for receiving any federal aid or federally insured mortgage loans.

PRESENT STATUS OF THE PROGRAM

It may now be helpful to summarize the present status of the flood insurance program. In order for borrowers to obtain federally-backed loans for construction or refinancing in identified flood hazard areas, they are required to purchase flood insurance for the structure. However, the community must follow some clearly defined guidelines.

Required Land Use and Control Measures

If a detailed rate-making study has not been completed for the community by the Federal Insurance Administration (FIA), then the community can become eligible under the Emergency Program. It does so by applying for eligibility and meeting the following requirements for land use and control measures within 6 months after the indicated data has been provided by FIA:

(a) Undefined special flood hazard area

The community must (1) require building permits for all construction, (2) review all building permit applications and require modifications to minimize flood damage, (3) review subdivision and new development proposals to minimize flood damage, and (4) require new or replacement water and sanitary systems that would minimize contamination.

(b) Identified special flood hazard area by an official Flood Hazard Boundary Map (FHBM)

Community measures for identified areas must (1) take into account neighboring flood plain management programs, (2) apply to all identified areas, (3) provide that flood plain ordinances take precedence over conflicting ordinances, (4) require building permits for all construction, (5) review building permit applications for new construction and major repairs or improvements to minimize flood damage, (6) review subdivision and new development proposals to assure minimum flood damage, and (7) require new or replacement water and sanitary systems to be designed to minimize contamination.

The Flood Hazard Boundary Map (FHBM) is the official map of the community, which is used by FIA, and represents the boundaries of the flood plain, mudflow areas, and erosion areas having special hazards. Special hazards are defined as those areas having a one percent chance of annual flood occurrence.

The following additional land use and control measures are required within 6 months after the indicated data has been provided by the FIA:

(c) Identified special flood hazard area with 100-year water surface elevations

Community measures for identified areas must (1) meet the requirements of paragraph (b), (2) require new construction or major improvements of residential structures to have the lowest flood (including basement) elevated to or above the 100-year flood level, (3) require new construction or major improvements of nonresidential structures to have the lowest floor (including basement) flood proofed to or elevated to or above the 100-year flood level, and (4) until a floodway has been designated, not permit any use unless it is demonstrated that the use will not increase the 100-year water surface elevation more than one foot at any point.

(d) Identified special flood hazard area with 100-year water surface elevations and floodway data.

Community measures must (1) meet the requirements of paragraph (c) with the exception of (c) (4), (2) designate a floodway for passage of the 100-year flood without increasing the water surface of that flood more than one foot at any point, (3) provide that nonconforming uses shall not be expanded but may be floodproofed if the 100-year flood level is not raised, and (4) prohibit fill or encroachments within the designated floodway unless offset by stream improvements.

Flood Insurance Rates

Under the Emergency Program, landowners may purchase up to \$35,000 worth of insurance for single family dwellings at an annual rate of 0.25 per \$100 coverage. At the completion of the rate-making study, a Flood Insurance Rate Map (FIRM) is issued by FIA and the community enters the regular phase of the flood insurance program. The FIRM delineates areas in which flood insurance may be sold at actuarial rates, and indicates the actuarial rate zones with each such area. The FIRM supercedes the FHBM and becomes the official zone designation by FIA for the community.

Construction of a building in a flood hazard area, which begins after the effective date of the FIRM or 31 December 1974, whichever is later, will require that flood insurance be purchased at actuarial rates. These rates are not only a function of location in the flood plain but also of the type of structure and its ability to withstand flooding. Structures built before the effective date of the FIRM (or 1 January 1975, whichever is later) or located outside of the identified flood hazard areas, can purchase first layer coverage at either subsidized or actuarial rates, whichever is cheaper. Second layer coverage is always at actuarial rates.

Communities notified of their special flood hazard areas should qualify for the program by July 1, 1975, or within one year of identification, whichever is later, or face the economic sanctions of the Flood Disaster Protection Act of 1973. Only Federal financial assistance for use in the special flood hazard areas is affected by non-participation.

A community may qualify for the program at any time. Should a community not qualify for the program by the prescribed dates, the community may enter the program at a later date. When the community enters the program, Federal financial assistance may be resumed for the special flood hazard areas.

A flood disaster victim will not be penalized for failing to purchase a flood insurance policy prior to a disaster. However, as a condition for the Federal disaster assistance loan, the victim will be required to purchase flood insurance to protect his home against future flood damage.

Only new construction in the special flood hazard areas is required to be built in conformity with the program's minimum criteria in return for the availability of flood insurance. The program does not prohibit new construction in the flood plains or floodway fringe areas.

ESTABLISHMENT OF PREMIUM RATES

To establish the premium rates under the flood insurance program, rate studies and investigations were required. The hydrologic method of establishing rates was used. This method included two basic elements: (1) the flood stage-frequency relationship; and (2) the depth-damage relationship.

Four Federal agencies with major responsibilities for gathering and developing flood information--the Corps of Engineers, the Geological Survey, the Tennessee Valley Authority, and the Soil Conservation Service--made a number of special studies for the Secretary of Housing and Urban Development. The studies by the Corps of Engineers, the Tennessee Valley Authority, and the Soil Conservation Service were designed to measure the location of property in relation to the flood hazard, the value of such property, and the average annual amount of damage that such property would suffer from flooding. The basic information for these studies had already been developed in connection with proposed flood protection projects. The Geological Survey developed similar information from a different approach to demonstrate the feasibility of determining rates based on average annual damages in areas where such flood protection studies had not been made. This involved mapping of flood risk areas, identification of properties subject to flood risk and measurement of flood damage. In total, 48 areas were studied; of these, six were agricultural, and 42 primarily urban. Of the urban areas, six were subject to coastal flooding and 36 to river flooding. The urban areas varied greatly in size, as did the sources of flooding.

Rates of average annual damage, the pure premium portion of the actuarial rate, for different types of properties were prepared for different flood risk zones in each of the areas. The flood risk zones were as follows:

Flood Risk Zone	Frequency Range in Years	Chance of Occurrence Each Year (Percent)	Will Be Flooded
A	5 and under	40.0	Very often
B	5 - 10	13.3	Often
C	10-25	5.7	Occasionally
D	25 - 50	2.7	Seldom
E	50 - 100	1.3	Rarely
F	100+	less than 1	Very Rarely

The flood risk zones in the 42 urban areas studied by the agencies were considered as one large sample for residential structures and contents; it was possible to estimate a median average annual damage per \$100 of value for each risk zone. The median values for each zone should not obscure the variation in average annual damages between cities on each flood risk zone. The topographical and other characteristics of a particular flood zone affected the depth of flooding and flood damage. Therefore, the rate of damages in Zones A in the city would not necessarily be the same as the damages in Zone A in another city, although each city would be flooded with the same frequency. These initial rates were applied during the first few years of the program, in which only the regular program was in effect. Due to the detailed engineering studies required for involvement in the regular program, few communities could readily get into the program, resulting in slow initial sales.

In 1972, in an effort to stimulate sales, FIA reduced the actuarial premium rates. The reduction was based on a rate restudy and comparison with the approximate 1000 flood loss claims which were filed during that year. This rate reduction increased the sales rate and brought the purchase of flood insurance within the reach of many more people. The largest sales

increases occurred after passage of the Flood Disaster Protection Act of 1973. Under the revised program of the 1973 Act, the limits of coverage were increased and segmented into two layers, a first layer of subsidized rates under an emergency program and a second layer of actuarial rates under the regular program, previously described. Tables 1 and 2 illustrate the limits of coverages available under the 1968 and 1973 acts and the rates under the subsidized emergency program.

Table 1. Limits of Coverage

Coverage	Subsidized Coverage		Total Coverage	
	1968	1973	1968	1973
Single Family Residential	17,500	35,000	35,000	70,000
Other Residential	30,000	100,000	60,000	200,000
Nonresidential	30,000	100,000	60,000	200,000
Residential Contents	5,000	10,000	10,000	20,000
Nonresidential Contents	5,000	100,000	10,000	200,000

Table 2. Emergency Program - Subsidized Policy Rates

Structure	Ann. Rate/\$100 coverage	Ann. Rate/\$100
	<u>on structure</u>	<u>coverage on contents</u>
Residential	\$0.25	\$0.35
Nonresidential	0.40	0.75

Tables 3 and 4 are typical examples of rate tables used to compute an annual premium for structural and contents coverage under the regular program.

FIA ELEVATION RATE TABLE III
SECTION A—ONE TO FOUR FAMILY RESIDENTIAL STRUCTURE
ONE STORY

ELEVATION OF FIRST FLOOR ABOVE OR BELOW BASE FLOOD ELEVATION	NO BASEMENT				WITH BASEMENT			
	ZONES				ZONES			
	A1—A7	A8—A14	A15—A17	A18—A30	A1—A3	A4—A7	A8—A9	A10—A30
+ 5 OR MORE	.01	.01	.01	.01	.10	.10	.10	.10
+ 4	.01	.01	.01	.01	.10	.10	.10	.10
+ 3	.01	.01	.02	.04	.10	.10	.10	.10
+ 2	.01	.02	.05	.08	.10	.10	.11	.13
+ 1	.01	.07	.10	.15	.90	.30	.24	.22
0	.12	.16	.19	.23	4.78	.84	.49	.33
- 1	.48	.31	.31	.34	13.13	2.13	.95	.49
- 2	1.59	.55	.47	.48	*	4.95	1.77	.71
- 3	*	.93	.70	.64	*	6.73	3.15	.98
- 4	*	1.48	1.00	.83	*	*	5.16	1.36
- 5	*	2.34	1.40	1.07	*	*	*	1.87
- 6	*	2.86	1.91	1.34	*	*	*	2.52
- 7	*	*	2.62	1.66	*	*	*	3.40
- 8	*	*	3.53	2.02	*	*	*	4.56
- 9	*	*	*	2.48	*	*	*	5.21
-10	*	*	*	3.03	*	*	*	*
-11 OR LOWER	*	*	*	*	*	*	*	*
ZONE RATE	.35	.55	.73	.95	7.36	2.01	1.33	1.12

*USE \$25.00 RATE.

**FIA ELEVATION RATE TABLE III
SECTION C—RESIDENTIAL CONTENTS**

ELEVATION OF FIRST FLOOR ABOVE OR BELOW BASE FLOOD ELEVATION	ALL ON FIRST FLOOR				ALL ON FIRST FLOOR AND BASEMENT			
	ZONES				ZONES			
	A1—A7	A8—A14	A15—A17	A18—A30	A1—A3	A4—A7	A8—A9	A10—A30
+ 5 OR MORE	.10	.10	.10	.10	.10	.10	.10	.10
+ 4	.10	.10	.10	.10	.10	.10	.10	.10
+ 3	.10	.10	.10	.10	.10	.10	.13	.16
+ 2	.10	.10	.12	.20	1.08	.35	.29	.28
+ 1	.10	.18	.25	.33	5.64	1.01	.61	.48
0	.29	.38	.43	.49	15.33	2.58	1.20	.76
- 1	1.20	.72	.67	.72	24.08	6.07	2.28	1.17
- 2	3.92	1.24	1.01	.99	*	10.30	4.09	1.74
- 3	*	2.06	1.47	1.32	*	12.37	6.78	2.54
- 4	*	3.24	2.10	1.70	*	*	9.46	3.65
- 5	*	5.06	2.93	2.17	*	*	*	5.17
- 6	*	6.18	4.00	2.73	*	*	*	7.20
- 7	*	*	5.48	3.38	*	*	*	9.20
- 8	*	*	7.39	4.11	*	*	*	*
- 9	*	*	*	5.03	*	*	*	*
- 10	*	*	*	6.15	*	*	*	*
- 11 OR LOWER	*	*	*	*	*	*	*	*
ZONE RATE	.87	1.25	1.55	1.93	18.04	5.65	3.09	2.23

*USE \$50.00 RATE.

PRESENT SALES DATA

At present (July 1977) Larimer and Weld Counties are in the process of entering the regular insurance program. As of 31 March 1977, the following statistics have been accumulated in Table 5 for the National Flood Insurance Program in Colorado.

TABLE 5

Flood Insurance Policies in Effect in Colorado through 31 March 1977
Total Amount and Type of Program

<u>Municipality</u>	<u>Total Amount of Insurance in force (\$1,000)</u>	<u>Type of Program Emergency (E) or Regular (R)</u>	<u>Total Policies Written</u>
Town of Estes Park	267	E	13
City of Ft. Collins	952	E	39
City of Loveland	194	E	8
Town of Wellington	1,380	E	47
Larimer County (Unincorporated Areas)	5,237	E	177
City of Greeley	518	E	22
Weld County (Unincorporated Areas)	659	E	32
Colorado Totals	150,614	E & R	4,769
	36,586	R	1,044
	114,028	E	3,725

III. IMPLICATIONS FROM PREVIOUS STUDIES INDICATING THE NECESSITY OF ADDITIONAL INFORMATION FROM ANOTHER PERSPECTIVE TO DETERMINE WHY MORE FLOOD INSURANCE HAS NOT BEEN SOLD

The decision to examine several factors which influence the selling of flood insurance resulted primarily from information contained in a report prepared by Dr. Howard Kunreuther, et al., entitled "Limited Knowledge and Insurance Protection: Implications for Natural Hazard Policy." The report was concerned with determining "What factors induce individuals to protect themselves voluntarily against the consequences of low probability events such as floods or earthquakes?" Dr. Kunreuther set out to answer this question by interviewing 2,055 homeowners residing in 43 areas in 13 states subject to coastal or riverine flooding and 1,066 in 18 earthquake-prone areas of California. Half of those interviewed had purchased flood or earthquake insurance. No attempt was made in the study to examine the seller's side of flood insurance.

The results from interviewing the homeowners are as follows: Only seven percent of the persons questioned first learned about insurance because their agent contacted them. Over sixty percent of the uninsured sample were not aware that they were eligible to purchase coverage. It was also found that only a small percentage of both the insured and uninsured had specific knowledge of the deductible clauses in the current flood and earthquake policies. Twenty-seven percent of those uninsured living in floodprone areas were willing to pay more than the actual premium. Some people believe that one reason why more flood insurance is not sold is because people expect federal aid after a disaster. However, the survey revealed that a majority of both insured and uninsured homeowners expected to receive no aid at all from the federal government. Kunreuther states that this suggests that prior to a

disaster, most individuals do not think about the problem, and hence, federal aid has not been a motivating force in the decision process related to insurance. Data from the surveys indicate that continuing development of flooded areas along the rivers and coasts reflects little concern for the hazards involved. Kunreuther further points out that residential dwellings along the coasts have appreciated more rapidly in recent years than similar property in less hazardous areas.

Kunreuther found that "the participants in the controlled experiments were more likely to insure themselves, primarily against events having a high probability of occurrence even though the loss expectation was low. Conversely, they did not insure against the high loss, low probability event. Hence, we can only conclude that unless the probability of an event is considered above some threshold level, individuals will not concern themselves with potential losses and hence will not even consider insurance." Recognition of this threshold level by the homeowner is the key to the purchasing of flood insurance. This recognition, as Kunreuther points out, could come from past experience (e.g., a recent crisis) and information furnished by federal, state and local agencies, insurance agents, and financial institutions. This report intends to examine whether the seller attempts to help his clients perceive this threshold level. So the question becomes, is it the role of the insurance agent to convince the public that they need to purchase flood insurance, or should the public (through the media) recognize the threshold and approach the insurance agent?

Kunreuther points out that when tropical storm Agnes struck in 1972, 61,228 flood insurance policies were in effect. In 1975 when Hurricane Eloise struck, there were 258,744 policies in effect. From the increase in the sale of flood insurance policies alone, one cannot conclude that the increase was directly influenced by people's perception that a "threshold level" had

been exceeded. However, one cannot totally discount the fact that the crisis situation played a small part in the decision process. A similar situation existed for Larimer County, Colorado. In September 1976, in the aftermath of the Big Thompson Flood on 31 July 1976, there were only 68 flood insurance policies in force in Larimer County. In March 1977 there were 177 policies in force. Again, was a "threshold level" perceived by the persons that purchased new policies or did the insurance agents and lending institutions convince these people? Hopefully this study will clarify this dilemma.

The need for information concerning the flood insurance program was also pointed out in Kunreuther's report. For instance he cites the fact that in an area in New York State "local leaders downplayed the processes through which the individual communities could join the National Flood Insurance Program because of the political sensitivity of the land-use regulations involved. As a result, most residents of those communities were not aware of the fact that they could purchase flood insurance." In Larimer County, many persons affected by the Big Thompson disaster stated that they were unaware of the existence of flood insurance. This indicated that information was needed by the public concerning the flood insurance program. The problem that remains is whose responsibility is it to furnish this information? The authors of this report will attempt to offer some suggestions along these lines.

In another study entitled "Implementation of the National Flood Insurance Program in Larimer County, Colorado" by Howard M. Whittington, et al., based on their interviews with lending institutions about investigating all outstanding loans made prior to the enactment of the flood insurance program in Larimer County, the lenders expressed doubt that the work would be worth their while. The Whittington study was also concerned with the interviewing of several insurance agents. One outcome of the interviews was a determination

that "it was not worth the time involved to actively promote the flood insurance program (from the standpoint of profit potential). Representatives from CNA Insurance of Denver (the servicing company in Colorado for the flood insurance program) said that many of the problems they had experienced were the result of ignorance of the program by the people actually selling the insurance." Our study will attempt to verify some of these findings, in addition to going several steps further in trying to find other factors which influence insurance agents in the selling of flood insurance.

Therefore, based on findings made by Dr. Howard Kunreuther and Howard M. Whittington, the authors of this paper believe one of the main problems with the flood insurance program is found on the sellers' side (e.g., incentive to insurance agents, lack of/or inadequate information, confusion over role of insurance agents, etc.). By examining the factors which influence the selling of flood insurance several policy recommendations will be made to possibly improve the sales of flood insurance.

As previously stated to determine these factors, it was necessary to develop a questionnaire. A random sample of 29 insurance agents in the Ft. Collins, Loveland and Greeley areas was chosen; this sample represented 40 percent of all agents in Larimer and Weld Counties. The questionnaire was also intended to determine the benefit of the NFIA workshop to the sellers of flood insurance.

IV. PREPARATION OF THE QUESTIONNAIRE

The questionnaire used during the interviews was prepared by the authors of this report, with the assistance of Dr. Harold Cochrane, Assistant Professor of Economics at Colorado State University, and two Fort Collins insurance agents. The questionnaire used is shown in Figure 1. Four general purposes of the questionnaire were as follows:

1. to determine the agent's attitude toward the flood insurance program and its administration;
2. to identify attitude and ability differences between attenders and non-attenders of NFIA workshops;
3. to determine how the agents feel about the commission rates they receive for selling flood insurance; and
4. to compare the agent's sales commission with his cost of writing a flood insurance policy (cost = agent's time plus overhead).

The questionnaire was divided into two parts: specific and general. The intent of the specific questions was to provide the following information about each agent:

Question 1 identified the agent's main line of sales, i.e., property-casualty, life, auto, etc.

Question 2 provided direction in the event the agent did not write flood insurance, but referred customers to another agent.

Question 3 identified NFIA workshop attenders.

Questions 4, 5 and 6 indicated the agent's feeling about the NFIA workshop he/she attended, and the number of sales before and after the workshop.

Question 7 identified the approximate number of policies sold by non-attenders.

Question 8 identified the agent's source of customers.

SPECIFIC QUESTIONS

1. What is the main line of insurance that you sell?

2. If flood insurance is not one of your regular sales lines, to whom do you refer potential customers?

3. Have you attended a NFIA workshop on the selling of flood insurance?
 Yes
 No

If you answered "yes" to Question #3, then also answer Questions 4, 5 and 6.
 If you answered "no" to Question #3, then proceed with Question 7.

4. When and where was the workshop held and how did you find out about it?

5. Make a general statement about the merit of the workshop. _____

6. How many flood insurance policies have you written before and after the workshop?

<u>Before</u>	<u>After</u>
<input type="checkbox"/> 0-5	<input type="checkbox"/> 0-5
<input type="checkbox"/> 5-10	<input type="checkbox"/> 5-10
<input type="checkbox"/> 10-15	<input type="checkbox"/> 10-15
<input type="checkbox"/> Over 15	<input type="checkbox"/> Over 15

7. How many flood insurance policies have you written?

0-5
 5-10
 10-15
 Over 15

8. Have the majority of the policies been sold through:

Customers referred by banks in conjunction with attaining a home loan.
 Customers requesting without bank requirement.
 Agent contacted the customer.

9. Do you normally review and update your existing homeowners policies in order to add flood insurance if it is needed? _____
If so, how often? _____

10. What is your estimate of the number of homes in the Fort Collins area that are subject to flooding from the Cache La Poudre River?
 0 to 200.
 200 to 400.
 Over 400.

11. Are you familiar with the flood insurance programs in Loveland, Fort Collins and Larimer County? _____

If "yes," answer Question 12; if "no," answer Question 13.

12. The following items are pertinent to the flood insurance program and/or the understanding of flood hazard. Select a definition for each item.

Fort Collins, Loveland and Larimer County are in which flood insurance program?

- Regular
 Emergency

What does a flood hazard boundary map represent?

- Areas subject to all floods.
 Areas subject to a 100-year flood.
 Areas subject to a 50-year flood.

A 100-year flood:

- Cannot occur twice in 20 years.
 Will occur once in 100 years.
 Has a 1 percent chance of occurring in any year.

13. How do you perceive your role as an agent, when it comes to the sale of flood insurance?

- Sell only when contacted by the customer.
 Push the sale and contact customers in need of it.

14. Given the present sales commission rates of \$10 per policy, or 15 percent of the annual premium (Example: a single family dwelling with coverage of \$35,000 on the structure and \$10,000 on the contents, yields a premium of \$123/year and a commission of \$18.45/year under the emergency program), do you feel this is a fair rate for your participation?

- Yes
 No

If "no," answer Question 15; if "yes" answer Question 16.

15. Based on the example given in Question 1, with a premium of \$123/year, what would be a fair annual commission? Check one.

- 25% of first year annual premium, with no renewal commission.
 50% of first year annual premium, with no renewal commission.
 75% of first year annual premium, with no renewal commission.
 100% of first year annual premium, with no renewal commission.

16. What incentives would improve the sale of flood insurance? _____

17. Who would you contact to obtain the information?
_____ Federal Insurance Administration (FIA).
_____ National Flood Insurance Association (NFIA).
_____ CNA Insurance Co. (the State servicing company).

18. Why do you think flood insurance has not been sold or purchased more readily?
_____ Too costly to the homeowner.
_____ Homeowners feel they can get disaster relief.
_____ Not enough incentive for the agents to sell it.
_____ Poor publicity on the program.
_____ Won't happen to me attitude.

GENERAL QUESTIONS

1. What is your job title or company position? _____

2. How much is your time worth per hour? _____

3. How many people are employed in your agency? _____

4. Approximate cost per month to operate the agency? This figure should include: salaries, cost of office space and any other fixed costs: _____

5. How long does it take you to write and process a flood insurance policy?

6. What are your general feelings and comments about the flood insurance program?

Question 9 indicated efforts made by agents to write flood insurance if needed in conjunction with the current homeowner policies they had in force.

Question 10 was intended to identify the agent's perception of the degree of flood plain development within his/her area.

Question 11 indicated if the agent felt he/she was familiar with the flood insurance program in their area.

Question 12 asked three questions which tested the agent's understanding of terms pertinent to the flood insurance program.

Question 13 allowed the agent to indicate his/her perception of his/her role as an insurance agent involved in the sale of flood insurance.

Question 14 provided a sample policy premium and commission computation and asked if the agent felt the commission rate was fair for his/her participation.

Question 15 provided four alternative commissions which could be selected if the agent felt the existing rate was unfair. Each of the alternative commissions provided a larger front end commission with no renewal commissions.

Question 16 allowed the agents to suggest other incentives which would improve their participation in the sale of flood insurance.

Question 17 tested the agent's knowledge of where to obtain information about the flood insurance program.

Question 18 asked the agent to indicate reasons why he or she felt flood insurance had not been sold or purchased more readily. Five optional answers were possible.

The intent of the general questions was to provide the information needed in order to determine the agent's cost of writing a flood insurance policy.

Question 1 asked the agents their position within the organization to determine if they personally sold insurance or were in an administrative position representing the agency as a whole.

Question 2 asked the agents what their time was worth per hour. This figure was used in calculation of the cost to write a policy. In the case of administrative personnel, who did not actually sell, their answers were not used in determining the average cost of an agent's time per hour.

Question 3 asked the number of persons employed in the agency. This figure was used in determination of the average overhead per hour for operating the agency.

Question 4 asked the approximate cost per month to operate the agency. This figure was also used in determining the average overhead per hour for operation.

Question 5 asked the time required for each agent to write and process a flood insurance policy. The average time was used in comparison of the cost to sell to the commission earned.

Question 6 was a summary of the agent's general feelings and comments about the flood insurance program.

V. RESULTS OF QUESTIONNAIRE

Specific Questions

From question 1, all persons interviewed sold casualty insurance. Question 2 was not answered by any person thus confirming their main line of insurance to be casualty.

From question 3, of the 29 persons interviewed, 14 attended an NFIA workshop. Workshops were held at Denver, Loveland, Greeley, and C.S.U. Of those attending the workshops, 63 percent obtained pertinent information from the Independent Insurors of Colorado, 19 percent found out from the Larimer County Insurors Association, nine percent found out from Weld County Insurors Association, and nine percent found out through various lending institutions. The merits of the workshop stated by the persons interviewed are as follows:

	Greeley	C.S.U.	Loveland	Denver
Excellent	2	1	1	1
Very Good	1		1	
Good	4		5	
Poor			1	

It was determined from question 6 that more flood insurance policies were sold after they attended the workshop than before.

From question 7, 12 persons had written from 0-5 flood insurance policies, seven persons had written from 5-10 flood insurance policies, three persons had written from 10-15 flood insurance policies and five persons had written over 15 flood insurance policies.

Seventy-eight percent of the persons questioned stated that customers were referred to them by banks in conjunction with attaining a home loan. Eleven percent wrote policies because a customer had requested the policy, and another 11 percent wrote policies after they had contacted the customer. Thirty-one percent stated that they updated existing homeowners policies in order to add flood insurance. Of those agents updating existing policies, each stated that they did so on an annual basis.

The following responses were given in estimating the number of homes in the Ft. Collins, Greeley, and Loveland areas subject to flooding:

	Ft. Collins (Cache La Poudre River)	Greeley Cache La Poudre River)	Loveland (Big Thompson River)
0 to 200	4	1	2
200 to 400	3	1	1
Over 400	5	1	2

Six persons did not know. In all cases the answer 0 to 200 was correct.

Seventy-nine percent of those questioned were familiar with flood insurance programs in Ft. Collins, Loveland and Greeley. Of those answering yes to question number 11, 62 percent stated that Fort Collins, Loveland and Larimer County were in the emergency flood insurance program. The following responses were made to the question, what does a flood hazard boundary map represent?

- 10 - Areas subject to all floods
- 9 - Areas subject to a 100-year flood (the correct answer)
- 3 - Did not answer

In response to the statement "A 100-year flood...", 39 percent stated that it will occur once in 100 years, 52 percent answered correctly that it has a one percent chance of occurring in any year, and one person did not answer.

Eighty-three percent of those questioned stated that they perceived their role as an agent to sell flood insurance only when contacted by the customer.

In answer to question 14, that given the present sales commission rates of \$10.00 per policy, or 15 percent of the annual premium, do you feel this is a fair rate for your participation, 83 percent stated that this was a fair rate.

Question 15 was asked to determine a fair sales commission rate, if the agent felt the existing rates were unfair. Of the 29 persons interviewed,

four felt the present sales commission rates were unfair. Two felt a fair rate would be 25% of the first year annual premium with no renewal commissions. Two felt the rate should be 100% of the first year annual premium, with no renewal commission.

When asked for suggestions which might improve the sale of flood insurance (question 16) the following were the most prevalent responses:

- (1) More education in the area of flood insurance for both the agents and the general public (six persons gave this response)
- (2) Lower premium per \$1000 coverage to the buyer (five persons)
- (3) More education for the public (three persons)
- (4) A commission of 20 percent, instead of 15 percent per year to the seller (two persons)
- (5) More publicity by FIA (e.g., more T.V. spots, newspaper ads, etc., which tell of the flood problem in general) (two persons)
- (6) Larger first year commissions and lower renewal commissions to the seller
- (7) More stringent requirements by the financial institutions
- (8) Nation-wide advertising campaign with 50-50 cost-sharing between Federal government and private entities
- (9) If the threat of floods were more eminent sales would increase
- (10) Give no flood disaster relief to those who live in areas where flood insurance is available.

In answer to question 17, 21 percent stated that they would contact NFIA to obtain information on the program and 79 percent would contact CNA Insurance Company.

Question 18 asked "Why do you think flood insurance has not been sold or purchased more readily?" Of the 29 persons interviewed, the following results were obtained:

Too costly to the homeowners	27%
Homeowners feel they can get disaster relief	2%
Not enough incentive for the agents to sell it	10%
Poor publicity on the program	18%
Won't happen to me attitude	43%

General Questions

Question 1 asked the job title or position of the person being interviewed.

The following answers were received:

President or owner of the agency	17%
Vice President or part owner of the agency	11%
District Manager	11%
Secretary-Treasurer of the Agency	3%
Insurance Agent	55%
Insurance Secretary	3%

Question 2 asked how much his/her time was worth. Of the 29 persons interviewed, the average cost was \$13 per hour. There was no separation of attenders and non-attenders to the NFIA workshop.

Question 3 asked the total number of persons employed in the agency. The answer to this question averaged seven persons per office interviewed.

Question 4 asked the approximate cost per month to operate the agency. The average cost was \$1,016 per man month. This figure included attenders and non-attenders of the workshop.

Question 5 asked the time it takes to write and process a flood insurance policy. The NFIA workshop attenders averaged 27 minutes per policy, while the non-attenders averaged 35 minutes per policy.

Question 6 asked the agent's general feelings and comments about the flood insurance program. A wide range of comments were received, and were then grouped into the following 21 categories:

The insurance is easy to write, personnel at the state servicing company are very helpful	5%
The program is very valuable for those who need it	37%
The rates are too high	12%
I need more knowledge of the program	7%
Unclear guidelines for eligibility	3%

Risk should be spread further to lower the cost	5%
The program needs more promotion	15%
As an agent, I cannot afford to publicize the program	3%
All government affiliation should be stopped	3%
Some banks don't require it when they should	3%
Even after the Big Thompson flood, sales have not increased	3%
Public does not realize the perils they face	4%

For the purpose of comparing the cost of writing a policy to the commission received by the seller three general questions were devised. Question 2 was used to determine the hourly salary rate of each agent interviewed. Each agent was asked what his or her time was worth per hour; by averaging the answer given a rate of thirteen dollars per hour was computed.

In order to determine the total cost incurred by the seller in writing a flood insurance policy we felt it was necessary to find out company overhead per man-hour and add this to the average salary, in order to get a cost per hour to write a policy. Questions 2 and 4 were used to compute the average overhead cost per man-month. The monthly overhead cost, given in question 4 was divided by the number of persons employed by the company, given in question 3. Using a sample of seventeen companies, an average figure of one thousand sixteen dollars per man-month was computed; based on the average that each employee worked approximately one hundred sixty-eight hours per month. Dividing the overhead per man-month by the hours worked per month gave a value of six dollars per hour in overhead cost per man. This cost added to the average salary rate gives an average rate of nineteen dollars per hour for writing a policy.

An average of thirty minutes was given by the agents as the amount of time it takes to write a flood insurance policy. Thus the cost to them would be nine dollars and fifty cents per policy. The maximum premium under the emergency program which provides \$35,000 on the structure and \$10,000 on contents, is \$123.00 per year. The seller received a commission of 15 percent

of the premium which at a maximum would be \$18.43. Thus this sale would net the agent \$8.93 in commission.

It can be noted from results of the survey that non-attenders of the NFIA workshops took longer than 30 minutes to write a policy, so their profit would be less. While the workshop participants took slightly less time than 30 minutes to write a policy and their profit margin would be more than the average of \$8.93 per policy.

This example clearly shows the lack of a profit making incentive to the seller. Although most agents interviewed felt the commission derived was sufficient, since they offered the insurance as a service feature, they also seemed to be in agreement that larger commissions were not the answer to increasing the marketing of the insurance. Even with larger commissions, they would continue to wait for customers to request coverage, rather than actively soliciting customers.

VI. INTERPRETATION OF RESULTS FROM QUESTIONNAIRE AND MULTIPLE REGRESSION ANALYSIS

A multiple regression analysis was used to examine the results of the questionnaire and to compute equations for predicting sales. The analysis attempted to measure the degree of interrelationships between a dependent variable (sales) and three or more independent variables. The statistical program TSP obtained from the Harvard Institute of Economic Research was used for this analysis.

Fundamentally, a regression equation is used to estimate a dependent variable (e.g., X_1) from a set of independent variables (e.g., X_2, X_3, \dots), and is sometimes called a regression equation of X_1 on X_2, X_3, \dots and may be written as $X_1 = F(X_2, X_3, \dots)$.

With two separate analyses we attempted to establish a relationship between the sales of those attending an NFIA workshop (ATAFTSAL), the dependent variable, with several independent variables, and also the correlation between the sales of those not attending an NFIA workshop (NONATSAL), the dependent variable, with several independent variables.

The first run of the program included the following independent variables:

- a. ATTEND - Those that attended an NFIA workshop were given a value of one and those that did not attend were given a value of two.
- b. ATBEFSAL - the mean of the sales (question 6 on questionnaire) before attendance at the workshop.
- c. ATAFTSALES - Chosen as the dependent variable for those that attended an NFIA workshop, the mean of the sales (question 6 on questionnaire) after attendance at the workshop.
- d. NONATSAL - Chosen as the dependent variable for those that did not attend an NFIA workshop. The mean of the total sales (question 7 on questionnaire) of flood insurance policies of those not attending the workshop.

- e. MAPSOL - Represents how each agent sold the majority of his/her policies.
- f. UPDATE - Indicated whether the agents updated existing homeowners policies.
- g. ESTIMATE - A value of one was given if the agent answered from 0-200 in question 10 on the questionnaire and a value of two was given if they answered more than 200 or indicated they did not know.
- h. FAMILIAR - A value of one was given if the agent stated that he/she was familiar with the flood insurance programs in Larimer and Weld Counties, and a value of two was given if the agent was unfamiliar with the program.
- i. QUIZ - A value of three was given if the agent answered incorrectly all questions under question 12 on the questionnaire. Values two, one and zero respectively were given for 2 incorrect answers, 1 incorrect answer, and all correct answers.
- j. ROLE - A value of one was given if the agent interviewed perceived his/her role as selling flood insurance only when contacted by a customer. A value of two was given if the agent perceived his/her role as contacting the customer in order to sell flood insurance.
- k. SALCOM - A value of one was given if the agent felt that the present sales commission was adequate and a value of two was given if the agent did not feel that the present sales commission was adequate.
- l. FAIRCOM - A value of one was given to those that answered 25% in question 15 all the way to a value of four if the agent answered 100%.

After the first run, and examining the relationships of the dependent variables with the independent variables, the decision was made to separate the dependent variables into two categories, i.e., workshop attenders and nonattenders and then to do two different analyses. The following independent

variables were chosen as those contributing most to the dependent variable (NONATSAL): MAPSOL, UPDATE, ESTIMATE, QUIZ, and SALCOM. The following independent variables were chosen to be most representative of the dependent variable (ATAFTSAL): ATTEND, MAPSOL, UPDATE, QUIZ, and ROLE. Several computer runs were made, with the final runs yielding the following results:

For the dependent variable ATAFTSAL, the correlation matrix indicated that for the independent variable MAPSOL, the sales of flood insurance decreased as the agent had to contact the customer. The results of the questionnaire further substantiates the fact, since 78 percent stated that customers were referred to them by banks. These results suggest that some method should be employed to enable the consumer to perceive the "threshold level," and contact the agent. The means by which this result can be achieved will be explored in Section VII of this report.

From the correlation matrix of the regression analysis, ATAFTSAL vs. UPDATE, it was determined that sales decrease as the agents contact homeowners concerning inclusion of flood insurance with existing policies. This substantiates the finding of ATAFTSAL vs MAPSOL, that the agent could "turn-off" an existing customer by concentrating too much on his/her envisioned flood insurance needs. The correlation matrix with NONATSAL vs. UPDATE further reinforces this finding. There was an indirect correlation between ATAFTSAL vs. QUIZ, however there was a direct relationship between ATAFTSAL vs. UPDATE. The authors contend that QUIZ is directly related to ATTEND. The results of the questionnaire showed that those attending the workshop answered more answers correctly on QUIZ than did those who did not attend. The sales were somewhat higher for those attending the workshop than for those that did not. This implies that familiarity with the program allows an agent to be more efficient. There was a direct relationship between ATAFTSAL vs. ROLE

in that sales increase as the customer contacts the agent. This finding reinforces the consensus drawn from the questionnaire, since 83 percent of those questioned stated that they perceived their role as an agent to sell flood insurance only when contacted by the customer.

The following are the equations obtained by the least squares fit of the data.

Dependent Variable ATAFTSAL:

$$\begin{aligned} \text{(Attenders of NFIA Workshop) SALES} &= 11.89 + .2168 \text{ MAPSOL} - 8.522 \text{ UPDATE} \\ &+ 4.393 \text{ QUIZ} + 3.020 \text{ ROLE.} \end{aligned}$$

for an R-Squared of .6140

Dependent Variable NONATSAL:

$$\begin{aligned} \text{(Nonattenders of Workshop) Sales} &= 16.5 - .2766 \text{ UPDATE} - 5.872 \text{ ESTIMATE} \\ &- 3.638 \text{ QUIZ} + 7.5 \text{ SALCOM.} \end{aligned}$$

for an R-squared of .5305

Based on the results of the questionnaire only, it can be concluded that the workshop held by NFIA benefited the agents by increasing their working knowledge of the flood insurance program over those that did not attend. For instance, those that attended the workshop answered more correctly which flood insurance program was in effect for Larimer County and were able to answer correctly a larger portion of question 12. From responses by the agents attending as to how they found out about the workshops, the conclusion can be made that the dissemination of information announcing the workshops was not effective. Many agents found out about the workshops by word of mouth. It was also determined from the questionnaires that the workshops were not held on a frequent basis. Those that did attend the workshops found them informative and helpful. One agent commented

that the workshops lacked sales and marketing data. The Instructor's Guide for the workshops mentions certain marketing techniques, however, very few successful case studies are presented. The authors of this report recommend that NFIA should be more responsive by regularly scheduling workshops. The agents should not be responsible for requesting the scheduling of workshops.

It was determined from the questionnaires that many agents believed that flood insurance is just another service available to their customers, since the policy is the state servicing company's (CNA) and not part of the agent's regular line. Also, the agent does not have binding authority on a flood insurance policy which he/she has on his/her regular line of insurance. From those interviewed it was also determined that many agents were uncomfortable with the handling of flood insurance simply because it was a new line. Further substantiating the agent's perception of the sale of flood insurance as a service, is the fact that 83 percent of the agents interviewed stated that the present sales commission rates of \$10 per policy or 15 percent of the annual premium is adequate for their participation. At this rate, most of the agents broke even. The authors believe that as long as the agents break even, they will continue to write flood insurance policies.

Many agents expressed the fact that they should not bear the full cost for publicizing the program due to the expense and also the fact that more promotion is needed from a higher level, causing customers to become informed enough about the flood insurance program to contact their insurance agent. Informational and promotional techniques should be realistic enough to convince the people of the possible risks. For instance, almost a year after the Big Thompson disaster, several agents in the Loveland area still cannot sell flood insurance to the remaining residents in the Big Thompson Canyon. The agents stated that some residents have the attitude that the 100 year flood will not occur again until another 99 years, therefore no insurance is necessary.

It was also found that a majority of the agents' customers have the attitude that a "flood cannot happen to me." Now, very few agents attempt to go door to door within the canyon simply because word has gotten around that no one seems to want flood insurance. Since the sale of flood insurance is a break-even proposition for most agents, losses would occur if the agents tried to sell "door-to-door" the insurance in the Big Thompson Canyon.

Agents also believe that flood insurance has not sold more readily because it is too costly to the homeowner. This response further emphasizes the "service" aspect of the flood insurance program. It is recommended that the rates should be reviewed on a regular basis in consultation with NFIA.

VII. RECOMMENDATIONS BASED UPON RESULTS

The key finding of this study is that if more flood insurance is to be sold, the public must become more informed about the flood insurance program and how it directly relates to him/her. Also since a majority of the insurance agents interviewed believe that the existing rates are adequate, they will continue to break even when writing flood insurance policies. Thus, a possible solution becomes a resolution of the information dilemma; whose responsibility is it to inform the public - NFIA, FIA, Servicing Company, or the insurance agent? And who should keep the sales agent updated and informed?

Throughout the study the lack of knowledge of the flood insurance program on the part of the insurance agent and the property owner became very apparent. Many of the agents interviewed did not have a good working knowledge of the program, with the appropriate maps, brochures and forms needed to sell and write the insurance. The general public was not included in the interviewing process, but it was obvious through discussions with the agents that the public does not perceive their flood hazard exposure. For these reasons, this section has been devoted to illustrating and discussing some of the most informative material identified during this study, which is readily available for dissemination to sales agents and property owners.

It is also recommended that lending institutions working in tandem with local insurance agents can identify customers located below the designated 100-year base flood. A computer print-out could notify the insurance agents which of the existing homeowners policies were within the 100 year boundary. The insurance agents could then send letters to policyholders stating the person is known to be subject to flooding.

Public Information Program

Advertising of the flood insurance program has been done on a limited

basis by Federal Insurance Administration, NFIA, Independent Insurance Groups and sales agents. Two of the twenty-nine insurance agents interviewed do insert flood insurance availability notices in their annual premium notices for homeowner policies. An example of one of these notices is as follows:

IMPORTANT NOTICE

Flood insurance is now available in most areas of Weld County. For information concerning rates and eligibility, please contact your agent.

AGENCY NAME

Phone Number

Notices of this type are very simple to prepare, but will aid in program awareness. Most agents agree that more publicity is needed, but in general they feel it is not their place to do it. Figures 2 and 3 are excellent examples of publicity of the program by private organizations that were identified during the data gathering phase of the study. Figure 2, a newspaper advertisement, was run by the Independent Insurers of Denver, Inc. This type of advertising is most beneficial in that it not only points out the program availability but also makes it clear that a standard homeowners policy does not cover loss from flood, a misconception held by many homeowners. Figure 3 is a very informative brochure entitled "FLOOD" which is published and distributed by one of the large insurance companies. In addition to the efforts of the insurance agents and companies, FIA has prepared a television advertisement which shows scenes of the Big Thompson Canyon flood, with Governor Lamm of Colorado endorsing the program. FIA also distributes a brochure titled "What Colorado Residents Should Know about Flood Insurance," which is shown as Figure 4. Of all the public information items presently available, the authors feel the four items discussed above are the most effective for stimulating interest and awareness of the flood insurance program. It is our recommendation that further public information efforts should be made along these lines.

Q. What is the National Flood Insurance Program and what does it do?

A. Established by the National Flood Insurance Act of 1968, the program makes specified amounts of flood insurance, previously unavailable from private insurers, available at federally subsidized rates — rates much lower than insurers could charge for the same coverages and be profitable. The program also includes mudslide coverage.

Q. Who's responsible for the program?

A. The Federal Insurance Administrator in the U.S. Department of Housing and Urban Development has authority to administer the program which is a cooperative effort between the federal government and private insurers. The insurers are represented by the National Flood Insurers Association (NFIA), formed in 1969.

Q. Why was flood insurance not available before 1969, when the government and the insurance industry got together?

A. Because of limited risk spread, a private insurer could not provide coverage at affordable rates without suffering unbearable underwriting losses. If it had charged adequate rates for such coverage, the public couldn't afford it.

Q. What does the NFIA do?

A. An association of private insurance companies which helps administer the program, its duties include appointing a company in each state to furnish flood insurance information to the public and to insurance agents. This company also processes all flood insurance policies and handles claims.

YOUR COMMUNITY MUST BE ELIGIBLE

Q. To whom is flood insurance available?

A. Potentially, it is available to residents of the approximately 7,000 flood-prone communities in all 50 states. But it is available only to residents of those communities that have taken the necessary steps to become eligible. So far, only about 1,300 communities have.

Q. How does a property owner know if he lives in a flood-prone area, and if he does, how does he know if it has taken the necessary steps to become eligible for flood insurance?

A. Local officials or his insurance agent should be able to tell him.

HOW TO ESTABLISH COMMUNITY ELIGIBILITY

Q. What does he do if his community is flood prone but has not become eligible for flood insurance?

A. If he is interested in obtaining flood coverage, he should do whatever he can to generate and organize support to encourage his community to become eligible. He can circulate petitions, talk with local officials — city council or county board members, for example — and encourage others to do the same.

Q. How does a community become eligible?

A. To become eligible, it must agree to adopt certain land use and flood control measures and then submit written application to the Federal Insurance Administrator. Assistance in qualifying is available from the Administrator. When a community has adopted the controls, it becomes eligible for the "Emergency Programs." After the controls are actually implemented, it becomes eligible for the "Regular Program."

Q. How does coverage under the "Emergency" and "Regular" programs differ?

A. Under the "Emergency" program, coverage is available — at subsidized rates — for up to \$17,500 for single-family dwellings; up to \$30,000 for all other eligible structures; and up to \$5,000 per tenant for contents. (Subsidized rates are supported substantially by the Federal Government and thus are lower than actuarial rates — those which companies would have to charge if there were no subsidy.)

Under the "Regular" program, a property owner may buy an additional \$17,500 in coverage on single-family dwellings; an additional \$30,000 on all other eligible structures; and an additional \$5,000 on contents — all at full actuarial rates.

Q. How does a property owner obtain coverage?

A. After a community becomes eligible, coverage may be purchased from any property-casualty insurance agent or broker licensed within that state.

Q. What structures are eligible for flood insurance?

A. All structures used for residential, business, religious or agricultural purposes, structures occupied by nonprofit organizations and structures used by state or local governments or their agencies.

Q. What losses are covered?

A. Losses resulting from general inundation of normally dry lands from (1) overflow of inland or tidal waters (2) unusual and rapid accumulation or runoff of surface waters from any source, and (3) mudslides.

Q. How much will coverage cost?

A. The chart below lists the new subsidized rates for buildings and contents, according to their value. Representing a substantial decrease from the former rates, the new rates became effective July 10.

Type of Structure	Value of Structure	Annual Building	Annual Contents
		Rate Per \$100 of Coverage	Rate Per \$100 of Coverage
Single family residential	\$17,500 and under	.25	.35
	17,501-35,000	.30	.40
	35,001 and over	.35	.45
All other residential	30,000 and under	.25	.35
	30,001-60,000	.30	.40
	60,001 and over	.35	.45
All non-residential	30,000 and under	.40	.75
	30,001-60,000	.50	.75
	60,001 and over	.60	.75

Q. Is there a deductible clause?

A. Yes. The amount of the deductible, which applies separately to the building and to contents, is \$200 or 2 per cent of the amount of loss, whichever is greater.

Q. How are claims handled?

A. Claims may be filed with the agent who sold the policy or with the insurance company that issued the policy.

Q. How can a person learn more about flood insurance?

A. He can learn more by contacting his insurance agent or by writing:

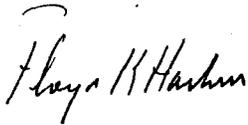
National Flood Insurers Association
160 Water Street
New York, New York 10038

What Colorado Residents Should Know About Flood Insurance

One other tragedy of the Big Thompson Canyon flood is that only one homeowner had Flood Insurance.

We urge you to read the information in this pamphlet to learn how you can avoid financial disaster if a flood strikes your home, farm or business.

Flood insurance is not included in the average business or homeowners' policy. Federal Flood Insurance is subsidized by the Federal Government and is a wise purchase for the many State residents who need it.



Floyd Haskell
U.S. Senator



Gary Hart
U.S. Senator



Richard D. Lamm
Governor of
Colorado



Carla A. Hills
Secretary of HUD

What Is National Flood Insurance?

National Flood Insurance is a program designed to help you avoid financial loss if you own property in a flood hazard area. It is also designed to help local communities prevent future flood disasters by developing information about locations of special flood hazard areas.

Who Should Have Flood Insurance?

Everyone who lives in an area where flooding is possible would be wise to purchase flood insurance. This includes Colorado residents who face annual flood threats from streams or rivers as well as people who live away from waterways but can be caught in flash flooding from sudden storms.

Where Can You Get Flood Insurance?

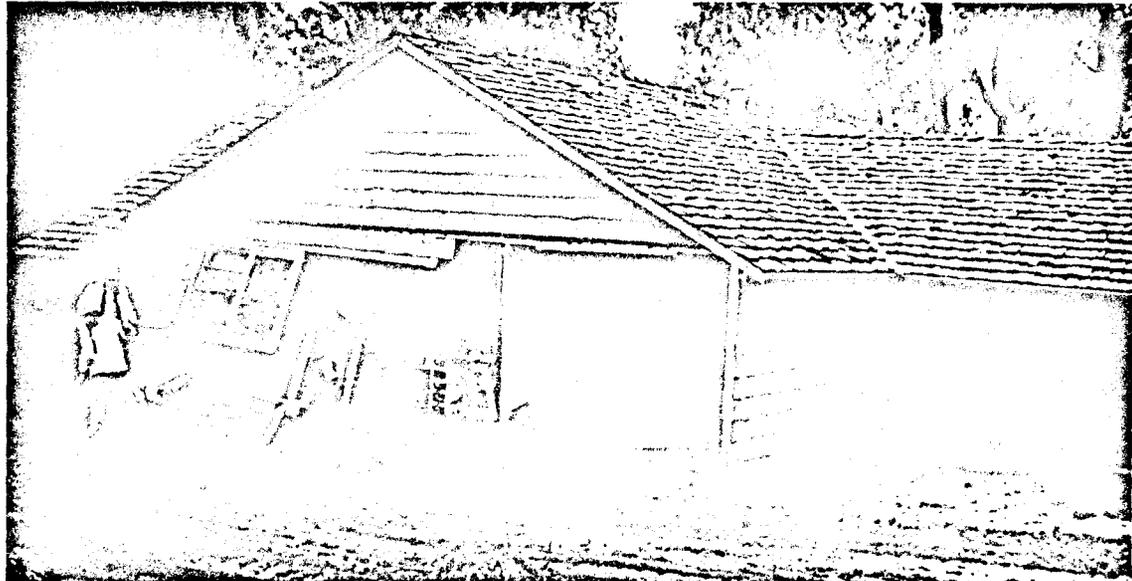
Federally-subsidized flood insurance is available through any licensed insurance agent or broker. If your local agent wants to serve you better by getting more information on rates and coverage, he or she can call the National Flood Insurers Association Servicing Company for Colorado at (303) 861-0561.

Can You be Turned Down for Insurance?

You can buy the insurance—and renew as often as you like—unless you live in a community that has not joined the program. Your local community must agree to manage flood plain areas—control construction that might lead to flood hazards for the occupants, and require that other construction in flood hazard areas meets flood standards—in order for you to be able to buy low cost flood insurance. You can learn if your community is in the program by calling the U.S. Department of Housing and Urban Development's Federal Insurance Administration toll-free at (800) 424-8872. Or, call the Colorado State Coordinating Agency for Flood Insurance, the Colorado Water Conservation Board at (303) 892-3441, or your local county planning office.

How Much Does Flood Insurance Cost?

A homeowner can buy \$10,000 in insurance on a home for just \$25 a year. The typical cost of \$35,000 structural home insurance and \$10,000 contents insurance is just \$123 a year. It's a modest investment you can't afford not to make!



Agent Information Program

Possibly the most important link in the sales process is the sales agent and his or her working knowledge of the program. The most important aspect of an effective sales program must then be keeping the agents abreast of the program status, all current maps and data necessary to sell flood insurance. After having discussed this aspect with FIA, NFIA, CNA Insurance Company, and the agents, the authors conclude that this task could best be handled at the level of the State Servicing Company. It would entail preparation of a complete list of participating agents by the Servicing Company. The Servicing Company should then act as a clearing house for agent information prepared by FIA, NFIA and themselves.

During the data gathering and interviewing phases of the study, a considerable amount of information useful to sales agents was obtained. The amount of information each agent had varied greatly. Of the information available to the agents, it is the authors' conclusion that the following list of items comprise the minimum information package each agent should possess.

NFIA has prepared a 125-page Flood Insurance Manual which thoroughly explains all aspects of the program and leads the agent step by step through the writing and processing of a policy. Due to the size of the manual, only the table of contents, Figure 5, is included to illustrate the amount and type of information contained in the manual. Most agents who attended the NFIA workshops still possessed and used the manual when writing a policy. It is a most valuable tool for the agent, even to those who have not attended a workshop.

Figure 6 is another NFIA brochure available to the agent, lender, insured and Servicing Company which clearly outlines the appropriate steps to be taken in the renewal of an existing policy. Figure 7 is a listing of toll-free numbers through which NFIA and FIA can be reached. The listing is distributed

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1. GENERAL RULES AND DEFINITIONS	1- 1
Additional Insurance	1- 9
Application and Declaration Form	1- 5
Assignment	1-11
Binders	1-10
Cancellations	1- 9
Coverage	1- 4
Deductibles	1-11
Eligibility	1- 3
Flood Defined	1- 3
Flood Insurance Maps and Zones	1- 6
Insurance to Value	1-11
Loss Payable Clause	1-11
Maximum Amounts of Insurance	1- 7
Minimum Premium	1- 9
Mortgage Clause	1-11
New Construction	1-10
Other Insurance	1-11
Payment of Premium	1- 9
Policy Term	1- 9
Rates	1- 7
Replacement Cost Insurance	1-11
Specific Insurance	1-11
Waiting Period	1-10
Whole Dollar Premium	1- 9
2. EMERGENCY APPLICATION (NFIA-4)	2- 1
3. REGULAR APPLICATION (NFIA-2)	3- 1
4. CHANGE ENDORSEMENT (NFIA-3)	4- 1
5. RENEWAL APPLICATION (NFIA-5)	5- 1
6. CANCELLATION NOTICE (NFIA-9)	6- 1
7. POLICY QUESTIONNAIRE (NFIA-57)	7- 1
8. NOTICE OF LOSS (NFIA-11)	8- 1
9. PREMIUM NOTICES AND RENEWAL CERTIFICATES (NFIA-50,51,52,53,54,58,60 and 61)	9- 1
APPENDIX A—RATE TABLE SELECTION CRITERIA	A-1
APPENDIX B—RATE TABLES	B-1
APPENDIX C—RATING EXAMPLES	C-1
APPENDIX D—FIRST FLOOR LEVEL FOR RATING PURPOSES	D-1
APPENDIX E—STANDARD FLOOD INSURANCE POLICIES	E-1
APPENDIX F—FLOOD INSURANCE MAPS	F-1

national flood insurance program policy renewal

Steps	Action			
	Lender	Insured	Agent	Servicing Company
120 days before policy expiration			Receives questionnaire (NFIA-57) to up-date NFIA files	
45 days before policy expiration	If lender is payor, receives first premium notice (NFIA-50)	If the insured is payor, receives premium notice (NFIA-50)	Receives copy of first premium notice (NFIA-50A)	
45 days before policy expiration – if renewal premium cannot be calculated	Receives NFIA-58 advising lender to contact agent to renew policy	Receives NFIA-58 advising insured to contact agent to renew policy	Receives Renewal Application (NFIA-5) should complete & submit to Servicing Company with gross premium check	
14 days before policy expiration – if payor has not paid first premium notice	Receives Second Premium Notice (NFIA-52) to enable lender to renew policy		Receives Second Premium Notice (NFIA-51) indicating policy has not been renewed – should contact payor	
Policy Expiration Notice	Receives Policy Expiration Notice (NFIA-54) – has 20 days additional coverage; should contact agent to reapply for coverage		Receives Policy Expiration Notice (NFIA-53) – advised to reapply for coverage	
7 weeks after expiration				Receives Termination Notice (NFIA-55) if policy not renewed
UPON RENEWAL	Receives Renewal Certificate (NFIA-60)		Receives Renewal Certificate (NFIA-61)	Receives Renewal Certificate (NFIA-61)

Figure 6

by NFIA for use by agents and the public in clarification of problems and questions pertinent to insurance policy sales and claim reports.

Figure 7

Call your agent with questions about your flood insurance policy and to report claims; for additional information, use new toll-free telephones

The National Flood Insurance Program is a joint venture of the property insurance industry and the federal government. Your flood insurance policy has been made available to you through the National Flood Insurers Association, a pool of approximately 130 insurance companies, and sold to you through your local insurance agent.

Your insurance agent is the best person to contact to get information about your policy. The agent is dedicated to servicing your insurance needs, and he has your file and knows your particular circumstances. Also, for your claim to be processed, it **must** be reported to your agent.

Periodically, however, you may have questions about your policy or other insurance aspects of the program that can best be answered by NFIA and its servicing offices. Should you need additional information, NFIA has installed toll-free telephone lines in our insurance servicing offices in 14 states. If your state is not among those listed, a special toll-free number has been installed for your convenience.

In addition, the Federal Insurance Administration of the Department of Housing and Urban Development has a toll free number and would welcome any suggestions you may have for improving the flood program.

If you live in these states, call the following toll-free numbers:

Alabama	800-241-9925	Maryland	800-492-1966
Arizona	800-352-0381	Michigan	800-482-7022
California	800-252-0210	Mississippi	800-682-5340
Delaware	800-523-2829	New Jersey	800-645-8210
Florida	800-432-4876	New York	800-632-8192
Georgia	800-282-5859	North Carolina	800-432-6160
Illinois	800-322-0463	Pennsylvania	800-462-2870
Louisiana	800-362-6718	South Carolina	800-438-1047
Maine	800-482-0131	Texas	800-392-2271

**If you live outside the above states, call the following
Special Toll-Free Number: 800-336-4545**

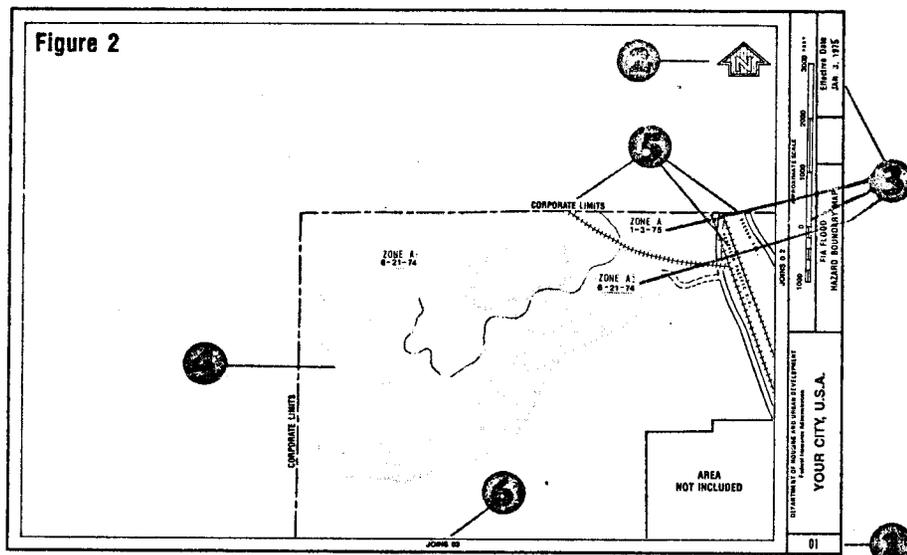
**Federal Insurance Administration Toll-Free Number 800-424-8872
800-424-8873**

The last agent information item is a brochure titled "How To Read Flood Hazard Boundary Maps" which is distributed by FIA. As shown in Figure 8,

How to Read the Flood Hazard Boundary Map

Other Considerations

From the National Flood Insurance Program:



These FHBMs may not show all flood hazard areas in the community. As new hazard areas are identified, new maps will be issued.

As a next step, FIA arranges for a detailed Flood Insurance Study. As a result of this Study, a Flood Insurance Rate Map is prepared that provides detailed information on the degree of flood hazard within identified Special Flood Hazard Areas including flood elevations. The degree of flood hazard is the key factor in determining insurance rates for specific properties in the area. If you have any questions or need further assistance contact the Federal Insurance Administration office for your state:

REGIONAL FLOOD INSURANCE OFFICES

REGION I—
Room 405A
John F. Kennedy Federal Building
Boston Massachusetts 02203
Telephone: (617) 223-2618
(For CT, ME, MA, NH, RI, VT)

REGION VI—
New Federal Building
1100 Commerce Street
Dallas, Texas 75242
Telephone: (214) 749-7412
(For AR, LA, NM, OK, TX)

REGION II—
26 Federal Plaza
New York, New York 10007
Telephone: (212) 264-4756
(For NJ, NY, PR)

REGION VII—
Federal Office Building
911 Walnut Street
Kansas City, Missouri 64106
Telephone: (816) 374-2161
(For IA, KS, MO, NB)

REGION III—
Curtis Building
Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106
Telephone: (215) 597-9581
(For DE, DC, MD, PA, VA, WV)

REGION VIII—
1405 Curtis St.
Executive Tower
Denver, Colorado 80202
Telephone: (303) 837-2347
(For CO, MT, ND, SD, UT, WY)

REGION IV—
1371 Peachtree Street, N.E.
Atlanta, Georgia 30309
Telephone: (404) 526-2391
(For AL, FL, GA, KY, MS, NC, SC, TN)

REGION IX—
450 Golden Gate Avenue
P.O. Box 36003
San Francisco, California 94102
Telephone: (415) 556-3543
(For AZ, CA, HI, NV)

REGION V—
300 South Wacker Drive
Chicago, Illinois 60606
Telephone: (312) 353-0757
(For IL, IN, MI, MN, OH, WI)

REGION X—
Arcade Plaza Building
Room 3068
1321 Second Avenue
Seattle, Washington 98101
Telephone: (206) 399-1028
(For AK, ID, OR, WA)

HUD-FIA-149
May 1976

or call Toll free (800) 424-8872

HOW TO READ FLOOD HAZARD BOUNDARY MAPS



A guide for interested citizens, community officials, lending institutions, and insurance agents.



Federal Insurance Administration
Department of Housing and Urban
Development
Washington, D.C. 20410

- 1 The lower righthand corner of each map sheet has a sheet number that corresponds to the numbered section on the Map Index Page. Turn to the sheet you are interested in.
- 2 Like the Map Index Page, each sheet has a North Arrow by which to orient it.
- 3 It also has a distance scale measured in feet and an Effective Date that may differ from the Identification Date on the Map Index Page. The Identification Date does not change. However, additional dates are added when new flood hazard areas are identified. The Effective Date for each sheet changes every time it is revised.
- 4 The shaded areas on each map sheet are the Special Flood Hazard Areas. The boundary of the shaded area shows the outline of the base flood . . . a flood that reaches this boundary has a 1% chance of occurring each year, commonly referred to as the 100-year flood.
- 5 The map sheet may also show (a) sections of the corporate limits; (b) roads and highways; (c) bodies of water; (d) railroad tracks and; (e) other landmarks to help you locate specific properties.
- 6 If certain areas are not a part of the community, such as state parks, military installation, etc., they are enclosed by a solid black line and the notation "Area not included."
- 7 The number of the adjoining map sheet is found on each margin of the sheet. Using these as guides you could put together one large map of the entire area.

this brochure along with a current Flood Hazard Boundary Map for the agent's sales area, makes the flood hazard determination a very simple task.

VIII. CONCLUSIONS

This study provides new, basic information for the consideration of policy-makers concerned with the National Flood Insurance Program. It was concluded that the basic problem in marketing flood insurance is the need for more public information. Increased public awareness would be a much needed stimulus to the insurance community, since the need for insurance must also be perceived by the consumer before the seller can be effective.

The sellers of flood insurance had several opinions as to the reasons why people do not protect themselves from flood hazards. Those persons who move into a flood plain may not be aware of the potential hazard. The uninsured status may also result from lack of concern for the hazard (it can't happen to me attitude) or from income constraints.

Even if a concerted effort is made by CNA, FIA, and NFIA to provide additional information to the public and the agents, this still is no guarantee that more flood insurance will be sold. The public must perceive for themselves the necessity for flood insurance and must be willing to face the consequences that federal aid may not be forthcoming. Further research, study, and experience will help resolve these problems.

REFERENCES

- Anderson, Daniel R., "The National Flood Insurance Program-Problems and Potential," Journal of Risk and Insurance, 1974.
- Senate Hearings, Committee on Banking, Housing and Urban Affairs, 13 and 23 June 1975.
- National Flood Insurance Act of 1968, Public Law 90-448, approved 1 August 1968.
- Housing and Urban Development Act of 1969, Public Law 91-152 approved 24 December 1969.
- HUD, "Questions and Answers, National Flood Insurance Programs," HUDNEWS, No. 75-67, 10 March 1975.
- National Flood Insurers Association, Flood Insurance Manual, 2 - 75 Edition.
- National Flood Insurers Association, Instructor's Guide to Flood Insurance Workshop, 1976 Edition.
- U.S. Code, Title 24, Part 1910, Subpart A - Requirements for Land Use and Control Measures.
- Flood Disaster Protection Act of 1973, Public Law 93-213, approved 31 December 1973.
- Kunreuther, Howard, "Limited Knowledge and Insurance Protection: Implications for Natural Hazard Policy," June 1976.
- Whittington, Howard M., et al., "Implementation of the National Flood Insurance Program in Larimer County, Colorado," Environmental Resources Center (CSU), September 1976.
- Phippen, George R., "On a Flood Plain, Can a Right go Wrong?", Water Spectrum, Vol. 6, No. 1, 1974.