The National Flood Insurance Program in the Larimer County, Colorado Area

by

Harry M. Shoudy

Colorado Water

Resources Research Institute

Information Series No. 44

Colorado State University

THE NATIONAL FLOOD INSURANCE PROGRAM IN THE LARIMER COUNTY, COLORADO AREA

by

Harry M. Shoudy

Submitted to

The Water Resources Planning Fellowship
Steering Committee

Colorado State University

In fulfillment of requirements for
a Special Study in Planning

August 1980

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGMENTS

I would like to gratefully acknowledge the cooperation and participation of the real estate agents, real estate loan officers, insurance agents, and community officials interviewed in Fort Collins, Greeley, and Loveland. Without their input this report would not have been possible. I would also like to give a special thanks to certain individuals who gave freely of their time and wisdom or provided other special assistance: Virginia Motoyama and Sherman Karcher, FIA; Marc Engemoen, Fort Collins Planning; Sam Sasaki, Greeley Director of Planning; Gregory Braun, Greeley National Bank; Rich Olson and Dennis Baiden, First National Bank of Fort Collins; Colleen Eakin, Galyardt and Harvey Agency Inc.; and, Gene Benedict, Farmers Insurance Group. While these people provided special assistance, this report could not have been completed without the many other people interviewed who are listed in Appendix B of this report. I would also like to give a special thanks to my wife, Leslie, who made many sacrifices and gave her full support in order to make my job easier.

I also appreciate the guidance of my graduate committee who have always been helpful and understanding with their advice. The committee consists of Norman Evans, Director of the Colorado Water Resources Research Institute and Chairman of the committee; Henry Caulfield, Professof Political Science; Kenneth Nobe, Chairman of the Department of Economics; R. Burnell Held, Professor of Outdoor Recreation; Everett Richardson, Professor of Civil Engineering; and, Victor Koelzer, Professor of Civil Engineering.

I. INTRODUCTION

Traditionally the federal government's response to flood control has been to devise plans that structurally modify the hazard. This approach has not proved adequate, however, as annual flood losses in the nation have continued to increase despite large annual public expenditures for flood control. Urbanization into flood plains and coastal hazard areas has been estimated to increase flood losses an average of 1.5 to 2.5 percent per year (Congress of the United States, Office of Technology Assessment, 1979: p. 1). In the 1960's flood plain management began to emerge which included a mixture of preventitive and corrective measures. The philosophy is to reduce the suceptibility to flood damages by integrating land management techniques with the traditional structural strategies.

The National Flood Insurance Act of 1968 provided persons living in flood hazard areas the option of purchasing federally subsidized flood insurance. When the voluntary nature of the program threatened its success, it was made mandatory for communities and included flood plain zoning or the communities would be subject to certain sanctions. The long range philosophy is that flood plain zoning will lessen the potential for future damages and flood insurance will replace the need for disaster assistance by placing the burden more equitably on those located in the flood hazard areas. By a recent executive order the Flood Insurance Administration (FIA) has been reassigned to the Federal Emergency Management Agency (FEMA). The purpose of this reorganization is to place the federal emergency mitigation and response activities in one agency to simplify services to states and local governments.

The objective of this report is to describe the National Flood Insurance Program and the public response to it in the Larimer County area. The report briefly discusses the various nonstructural flood control alternatives including the acquisition of land by Larimer County and the U. S. Forest Service in the Big Thompson Canyon area. The primary focus is on the nonstructural flood control alternative of flood insurance. Therefore, a brief legislative history of the National Flood Insurance Program is provided. Specifics concerning the operation of the current flood insurance program are included to provide a basic understanding of the program prior to evaluating the public response to it in the Larimer County area. The flood hazard and insurance program in selected communities is also described in order to provide other pertinent background information. Finally, the public response to the flood insurance program is evaluated. The findings of two previous reports are updated and other problems are identified through the interviewing of community officials, real estate sales persons, real estate loan officers, insurance agents, and FIA personnel.

II. NON-STRUCTURAL FLOOD CONTROL ALTERNATIVES

Under the present Carter administration, new emphasis has been given to non-structural flood control measures. In his Water Policy Message to Congress in June of 1978, the President reported that improved cost-sharing will remove biases in the existing system against non-structural flood control measures. The President delegated to the Water Resources Council the task of preparing a manual of uniform procedures for the computation of costs and benefits associated with water projects. In addition, the implementation of Principles and Standards was to be improved to include formulation and consideration of non-structural plans whenever structural water projects are being considered. This change in emphasis will modify traditional procedures of stressing structural solutions to flooding problems.

There are five different alternative measures that are commonly considered as non-structural measures for flood damage reduction. Non-structural measures lessen flood damages at specific sites but do not lessen or manage the flooding itself.

Flood Warnings

The National Weather Service provides this service resulting in many lives being saved and reduced damages, by warning people adequately in advance of a flood so that they can take measures to protect themselves and their possessions. While this method has proved invaluable, some improvements can be made in the predicting of floods to increase warning times and the accuracy of predictions. In Larimer County the effectiveness of the National Weather Service system is increased through the use of voluntary point weather spotters who are provided with weather equipment and notify the Larimer County Office of Emergency Management of unusual weather conditions in their area. The Office of Emergency Management coordinates with the Sheriff's office during flooding. These officers jointly make decisions concerning the type of warnings that are appropriate and whether residents should be evacuated. In the Big Thompson Canyon signs have been errected advising people to climb to higher ground in cases of flooding.

The area of communication of the predictions has even more potential for improvement. Traditionally the mass media and vehicle sirens have been depended upon in Larimer County to communicate the flood warnings. Possibly some form of communication device could be put into individual homes especially in areas subject to flash flooding where time is of the essence. This could also reduce the response time of individuals, when an immediate response is required, by communicating the degree of severity.

Flood Plain Zoning

The purpose of flood plain zoning is to restrict future development that would be subject to flood damages. The failure by individual property owners to manage their land in a manner compatible with the natural hazard shifts the real costs of their use of that land to the community, state, and nation (Baker et al, 1975: p. 70).

The Federal Insurance Administration (FIA) identifies flood-prone communities and sets standards of flood plain management as part of the National Flood Insurance Program. The regulatory flood plain includes the area within the 100-year flood plain. Zoning regulations should discourage construction within the regulated area to be consistent. This method does not serve as a means of reducing damages to existing development, but rather limits the growth of future damages. This is not a popular solution with flood plain property owners as it infringes on their rights to unrestrictive utilization of their property for commercial or residential construction purposes. Because of this situation, application has been limited. After the 1976 flood on the Big Thompson River, Larimer County took the initiative to declare a moratorium on the repair of all structures within Big Thompson Canyon that had been damaged more than 50 percent pending completion of a flood plain mapping study. Upon completion of the study, the county adopted new regulations limiting development within the 100-year flood plain and precluding the reconstruction of structures damaged more than 50 percent. It appears that variances were obtained in some instances as a number of structures are built on the edge of the river in several locations in the canyon.

If flood plain zoning had been employed by communities in the past, they probably could have avoided the strict FIA regulations they are now faced with. In a self-regulating situation, individual communities could have made exceptions for beneficial economic uses of the flood plain. Rather than trying to control the uneconomic uses, FIA has restricted all commercial and residential building uses in order to lessen the problems of management.

Flood Insurance

Flood insurance by itself does not reduce flood damages. It may even increase flood damages by spreading the financial burden over the general population of the country, which tends to encourage rehabitation and repair by affected individual owners of flood plain structures seriously damaged by a flood. While economically inefficient due to this situation and the fact that the reimbursement does not prevent future damages to those existing structures, the National Flood Insurance Program has been coupled with flood plain zoning to reduce future flood damages that would occur without the program. The aim of the program is to reduce flood disaster losses by encouraging state and local governments to control unwise development of flood plains (Kunreuther, 1978: p.28). As mentioned earlier floodprone communities are identified by FIA. Communities so identified have the option of participating in the federal insurance program or forfeiting the insurance. If nonparticipation is chosen, federal financial assistance to the area for acquisition or construction purposes will not be approved after July 1, 1975. In addition, the area will be subject to the FIA sanctions described later in this report. In effect the insurance program subsidizes portions of the damages to existing activities in the flood area, but requires communities to place restrictions on future development. FIA regulations define these restrictions as zero development in the floodway and development in the flood fringe area only if the lowest floor for residential structures is at or above the 100-year flood elevation. Commercial establishments are allowed to develop in the flood fringe area if they flood proof their structures. These requirements essentially force communities into a flood plain management situation. Although it is not considered as insurance, residents of flood plains are also protected to a certain extent from disasters such as flooding through the Federal disaster relief programs. Federal relief does not discourage individuals from going right back into the flood damage area after the disaster has passed. This will probably result in more disaster assistance in the future to those areas. Federal aid to some individuals or businesses that rebuild in the same location may result in their being better off after the disaster than before (Dacy et. al., 1969: p. 230).

Flood Proofing

Emergency action flood proofing usually consists of responding to flood warnings by removing possessions from the flood plain, sandbagging, or putting up other barracades to deflect water away from the structures (Healy, 1969: p. 215-218). A permanent form of flood proofing consists of adjustments to structures and building contents in order to reduce flood damages. Types of permanent flood proofing measures range from installing check valves or making the structure watertight, to physically raising such things as the utilities within the structure or the structure itself. From an economic standpoint it is more practical to apply these measure to new construction as opposed to existing flood plain structures. Many flood proofing measures can be adopted at little or no extra cost if included in the design of construction or repair operations (White, 1975: p. xvii).

Flood Plain Evacuation (Land Acquisition)

Flood plain evacuation reduces flood damages by physically removing structures from the flood plain. It works like an accelerated program of flood plain zoning where first structures are removed or destroyed and then the land is zoned in order to deny certain types of potential future development. After the 1976 flooding on the Big Thompson River, considerable land within the canyon was acquired by Larimer County and the U. S. Forest Service for public open space areas. Many advocated an acquisition plan to buy out the entire canyon. The final acquisition program cost $2.2 million and eventually took title to 123 parcels owned by 97 individuals. More details on acquisition are found in the discussion on Larimer County (unincorporated areas) in Chapter 5 of this report.

III. LEGISLATIVE HISTORY OF THE FEDERAL INSURANCE PROGRAM

Federal Flood Insurance Act of 1956 and Other Early Efforts

This was the first attempt by the federal government to provide low-cost federally subsidized flood insurance to homeowners. Flood losses are almost always excluded from the average homeowner's insurance policy. Because of the high risks, insurance companies simply could not afford to provide flood insurance policies at saleable rates. This federal program that would provide the needed flood insurance failed after only 9 months of existence when the House of Representatives failed to appropriate the funds to implement the program. It was felt that the rate making policy was basically unworkable, since it was a flat rate plan based on average annual flood damages and not on the probability of flooding and damage in any particular area.

Efforts were made to revive the flood insurance legislation in 1962, 1963, and 1965. In 1965 the Southeastern Hurricane Disaster Relief Act directed the secretary of Housing and Urban Development to study the feasibility of providing financial assistance to victims of floods and other national disasters. The study found that people were moving into coastal and riverfront locations faster than flood protection works could be built. For the most part these people were unaware of the flooding risks they faced and damage potential of floods in the United States was continuing to increase. The study also concluded that it was feasible to provide a flood insurance program with rates based on flood probability. In order to justify the subsidized federal expenditures, it was recommended that land use and control measures must be required to reduce or avoid future losses and future construction should pay acturial rates for flood insurance. These findings and recommendations culminated in the National Flood Insurance Act of 1968.

National Flood Insurance Act of 1968

This act authorized the current flood insurance program. It was a joint venture of the federal government and the insurance industry in 1968. Now it is totally a government program administered by the Flood Insurance Administration (FIA) of the Federal Emergency Management Agency (FEMA) with the assistance of the insurance industry in writing the individual policies. Since every state and practically every county in the country has some flood hazard areas, there was no member of Congress who was openly opposed to the program. The program was designed to provide reasonably priced flood insurance to homeowners currently living in flood hazard areas, provide a vehicle for flood plain zoning and regulation, encourage the prudent use of the flood plain for environmental preservation and enhancement, alert the public to the folly of building in flood hazard areas, and reduce future disaster loans and grants the government paid to flood victims.

While Congress fully supported the program, this does not imply that there was not opposition at the local level. Homeowners who were not located in the flood-prone areas objected to the higher taxes they would have to pay as a result of the program reducing flood plain development and therefore the future tax base. Owners of land in the flood plain objected to the lost developmental potential of their land without being compensated.

The 1968 flood insurance program was fully voluntary. The main incentive for participation by local communities was the federally subsidized insurance. By 1973 it became obvious that in most cases the incentive of subsidized flood insurance was not sufficient to offset the objections to the flood zoning regulations that were required by participating communities. Only 170,000 policies were sold in the first 5 years of the program.

The Housing and Urban Development Act of 1969 amended the 1968 Act in order to set up an emergency program. Prior to this amendment community participation could only occur after an expensive and time consuming rate-making study to establish the insurance premium rates. The establishment of the emergency program divided the implementation for a community into 2 phases. The community could apply and be admitted into the emergency program by passing a resolution that flood zoning regulations would be passed upon completion of the flood insurance study which fully delineated the flood hazard areas. The community in the interim had to regulate flood plain development through building permits to the best of their ability. Upon completion of the rate-making or flood insurance study the community would be required to pass and enforce more stringent flood plain zoning regulations as a requirement for entering the regular program. Initially the emergency program was to expire on 31 December 1971. This date has been extended by legislative actions many times and will probably continue to be extended as long as there are communities complying with the FIA requirements, but FIA has not yet completed their rate-making study.

The Flood Disaster Protection Act of 1973 and Other Subsequent Pertinent Legislation

Because of the limited community participation in the voluntary flood insurance program, the Flood Disaster Protection Act of 1973 made it a requirement for all communities for whom flood hazards were identified to participate in the flood insurance program as a condition for receiving future federal financial assistance. Additional purposes of the act were to substantially increase the limits of coverage authorized under the program, provide for the expeditious identification and dissemination of information concerning flood-prone areas, require participating communities to adopt adequate flood plain ordinances with effective enforcement provisions consistent with federal standards to reduce or avoid future flood losses, and require the purchase of flood insurance by property owners who are being assisted by federal programs or by federally supervised, regulated, or insured agencies or institutions in the acquisition or improvement of land or facilities located or to be located in identified special flood hazard areas. Section 102 (b) of the law is of particular significance as it concerns the program sanctions and is therefore quoted in its entirity.

> Each Federal instrumentality responsible for the supervision, approval, regulation, or insuring of banks, savings and loan associations, or similar institutions shall by regulation direct such institutions not to make, increase, extend, or renew after the expiration of sixty days following the date of enactment of this Act any loan secured by improved real estate or a mobile home located or to be located in an area that has been identified by the Secretary as an area having special flood hazards and in which flood insurance has been made available under the National Flood Insurance Act of 1968, unless the building or mobile home and any personal property securing such loan is covered for the term of the loan by flood insurance in an amount at least equal to the outstanding principal balance of the loan or to the maximum limit of coverage made available with respect to the particular type of property under the Act, whichever is less.

The Housing and Community Development Act of 1977 revised this to allow banks to loan mortgage monies for purchases or development in flood hazard areas without the requirement of flood insurance, if flood insurance was not available due to the community's nonparticipation. It also required lending institutions to notify a borrower, before the loan is made, whether in the event of flood damage federal disaster assistance will be available. Even though this revision allows lending institutions to make loans to people purchasing structures in flood hazard areas where flood insurance is not available, the majority of the real estate loan officers I interviewed in the different communities covered by this paper indicated that their banks would not make unmarketable and higher risk loans of this type. Federally insured or guaranteed loans (FHA, VA, or SBA) as well as all federal loans and grants are still prohibited in nonparticipating communities.

Other important provisions of the act are described in Section 201. In summary, within 6 months following the enactment of this law, all known flood-prone communities not participating in the program will be notified of their tentative identification. After notification they may make proper application to participate or submit technical data within 6 months that show the community is either not flood prone or that the flood hazards have been corrected by flood control measures. Formally identified flood-prone communities that do not qualify for the program within one year after notification will be subject to the sanctions previously described. In addition, no federal officer or agency shall approve any financial assistance to the community for acquisition or construction purposes in any of the special flood hazard areas. This was amended in 1977 to exclude nonflood related disaster assistance.

The Housing and Community Development Act of 1974 required lenders to give written notice to a borrower located in an identified special flood hazard area of that fact or obtain written assurance from the seller or landlord that the borrower has been notified of such hazards not less than 10 days before closing of the transaction. In order for the borrowers to obtain a federally-backed loan, they are required to purchase flood insurance on the structure in an amount equal to the outstanding balance of the loan.

IV. OPERATION OF THE CURRENT FLOOD INSURANCE PROGRAM

Background and Growth Trends

In the face of mounting flood losses, Congress created the National Flood Insurance Program in order to reduce annual flood losses through more careful planning and to provide property owners with affordable flood protection. For a reasonable cost, people owning or buying property in the flood plains can now insure against flood losses.

The National Flood Insurance Program is administered by FIA within the FEMA and has identified an estimated 20,000 communities as having special flood hazards. These communities must join the flood insurance program and enact and enforce ordinances sharply limiting construction of new buildings in flood-hazard areas, by 1 July 1975 or 1 year after the community has been formally notified by the FIA administrator, or face the sanctions previously described under the discussion of the Flood Disaster Protection Act 1973. Of course if the community can prove that it is not flood-prone or that flood hazards that may have existed have been corrected by flood works, by submitting competent technical data to that effect to FEMA within six months after notification, and if the Director of FEMA concurs, the community will be exempted from the program requirements.

The National Flood Insurance Program has experienced rapid growth since the imposition of economic sanctions in the Flood Disaster Protection Act of 1973. A report by Landenberger and Whittington contained 1974 and 1975 information concerning the number of communities participating in the National Flood Insurance Program as well as the estimated insurance policies in force, coverage, number of claims paid, and dollar amount of claims paid (Landenberger et. al., 1976: p. 18). Table 1 includes the 1974 and 1975 data they reported as well as an update through 1979. The consistent and rapid growth in policies and coverage are testimony to the programs effectiveness in increasing the burden of expense for flood relief on the landowners in the flood plain who are deriving the benefits.

TABLE 1

National Flood Insurance Program

(Year End Totals)

	1974	1975	1976*	1977	1978	1979
Communities participating	5,488	13,256	22,124	15,700	16,192	16,565**
Insurance policies in force (est.)	49,300	690,000	805,896	1,199,749	1,402,672	1,791,257
Coverage (billions of $)	12.5	18.3	NA	37.2	48.8	72.9
Claims Paid (millions of $)	21.0	72.1	NA	NA	73.3	89.3
Total***						

*as of 31 October 1976 rather than year end total
**as of 31 July 1979
***the national total of claims paid and amount since the inception of the program in 1968 to April 1980 is approximately 177,400 claims for a total amount of approximately $920 million

Requirements for Joining the National Flood Insurance Program

Entrance into the flood insurance program is done in 2 stages. The first stage is the Emergency Program and in order to be admitted the community must formally apply to FIA and enact minimal control measures over the flood plain. The flood plain management requirements a community must satisfy are related to the amount of information the community has been provided by FEMA.

When a community is declared to be a flood plain area having special flood hazards without a more precise definition of those hazards, the community must require permits for all proposed development in order to determine if that development is proposed within flood-prone areas. If the development will occur in a flood-prone area, the community is required to enforce certain flood plain control measures. The main control measures include modifications to the development to minimize flood damage and requiring new or replacement water and sanitary systems that would minimize contamination.

When a community has specifically identified flood hazards located on a FIA Flood Hazard Boundary Map, but does not have water surface elevation data or a floodway delineation, the community must require permits for all proposed development in any special flood hazard area identified by FIA and enforce more stringent flood plain control measures than for areas where less information is available. The community measures must take into account neighboring flood plain management programs, apply to all identified areas, provide that flood ordinances take precedence over conflicting ordinances, review building permit applications in order to make changes that minimize flood damages, and require new or replacement water and sanitary systems that would minimize contamination.

A community that is identified as a special flood hazard area where 100-year water surface elevations are available must meet all the requirements discussed for communities where less information is available. In addition, community measures for identified areas must require new construction or major improvements of residential structures to have the lowest floor (including basement) elevated to or above the 100-year flood level, require new construction or major improvements of nonresidential structures to have the lowest floor (including basement) flood proofed or elevated to or above the 100-year flood level, and until a floodway has been designated, not permit any use or development unless it is demonstrated that the use will not increase the 100-year water surface elevation more than 1 foot at any point.

For a community that has an identified flood hazard area with 100-year water surface elevations and floodway data, that community must meet the requirements stated in the previous paragraph except the requirement concerning the non designation of the floodway. With the information available in this situation, the community must designate a floodway for the passage of the 100-year flood without increasing the water surface elevation of that flood more than 1 foot at any point. In addition, the community must provide that nonconforming uses shall not be exapnded, but may be flood proofed if the 100-year flood level is not raised; and the community must prohibit fill or encroachments within the designated floodway, unless offset by stream improvements.

The program's flood plain management regulations also affect existing structures located in flood hazard areas. The existing structures cannot be substantially improved. Substantial improvement is defined as any repair, reconstruction, or addition to a structure the cost of which equals or exceeds 50 percent of the market value of the structure either before the improvement is started or the damage has occurred.

FIA reviews the community's approved ordinance and application. If acceptable, FIA notifies the community it is eligible for the sale of subsidized insurance up to certain limits. These specific limits are discussed later in this Chapter, TABLE 2. Normally FIA's review and notification take about 6 working days. The eligibility date for a particular community is always published in the Federal Register. Once the community is participating in the program, purchase of flood insurance is mandatory when obtaining a real estate loan in a flood hazard area. Policies are all based on the first layer subsidized rates discussed later in this chapter and only the first layer of insurance can be purchased ($35,000 of structural coverage on a 1-4 family residential structure and $10,000 on the contents).

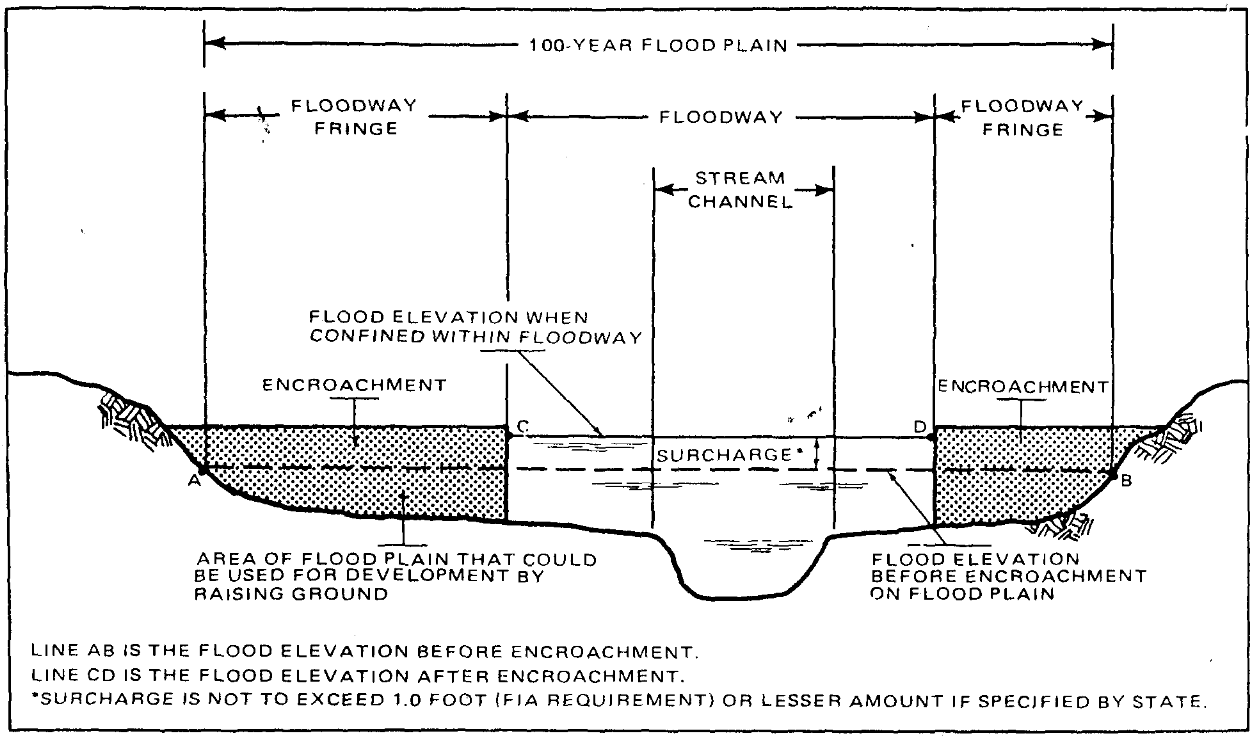
While the community is in the Emergency Program, FIA undertakes technical studies to define the boundaries and extent of the local flood hazard. These studies are called rate-making studies or a flood insurance study. A flood insurance rate map (FIRM) is prepared as a result of that study. The FIRM will define the flood insurance rate zones which are utilized under the regular program to determine the appropriate rates to charge for second layer coverage. In addition, the FIRM delineates the flood plain boundaries and rounded base flood elevations. Other information provided by the flood insurance study are a description of the community flood hazards, flood boundaries, floodway delineations, flood hazard factors and flood insurance zones. Upon completion of the study the community is eligible, if they comply with the additional FIA requirements, to enter the regular phase of the program. If a community does not upgrade its flood plain management measures by the recommended date, the community will be suspended from the program. Once suspended, flood insurance is no longer available and the sanctions discussed previously apply. The community may be reinstated into the program by complying with the required flood plain management measures. Under the Regular Program, all buildings whose construction started before the effective date of the FIRM, or before 1 January 1975 for FIRM's effective before that date, are eligible for first layer coverage at either subsidized rates or risk premium rates, whichever are lower. Regardless of the date of construction, risk premium rates are always required for the second layer coverage. For construction started on or after the effective date of the FIRM, or after 31 December 1974 for FIRM's effective on or before that date, risk premium rates are required for both the first and second layers of coverage. These actuarial rates can be prohibitively expensive for buildings that are not properly elevated or flood-proofed to lessen flood damage.

Flood Boundaries

Flood boundaries are delineated for the 100- and 500-year floods using flood elevations determined at each cross section. In order to provide a national standard without regional descrimination, the 100-year flood has been adopted by FIA as the base flood for purposes of flood plain management. The terminology 100-year flood elevation is often misunderstood. It does not mean a flood of this magnitude will occur only once every 100 years or that it is the worst flood of record over the past 100 years. Instead, it is the flood water level that is estimated to have a 1 percent chance of occurring each year at a given location. It is based upon complex engineering calculations of watershed characteristics, depth and frequency of flooding, and rate of stream flow. The 500-year flood is delineated to indicate additional areas of flood risk in a community.

Floodway Delineation

A floodway is the channel of a river or other watercourse and adjacent land areas that are required to carry and discharge a flood of a given magnitude without increasing the water surface elevation at any point more than a specified amount and without producing hazardous velocities. Mapping a floodway eases the problem of community administration of a flood plain ordinance since in determining the floodway area it is assumed that all flood plain areas outside the floodway will eventually be filled in or otherwise obstructed. This eliminates a case by case hydraulic analysis of each proposed development in the flood fringe areas. For the floodway, any obstruction which causes any rise in the base flood elevation is prohibited. Delineation of a floodway in a flood insurance study is based on a 100-year flood flow (base flood) and not allowing more than a 1 foot increase in the water surface elevation at any point. The remaining area of the flood plain (floodway fringe area or flood fringe) may be obstructed without increasing water surface elevations more than 1 foot. This encroachment of the floodway fringe usually requires landfill so that the lowest floor of new development is above the 100-year flood elevation. FEMA does not encourage filling in the flood fringe areas of the flood plain. Encroachments allowed in the flood fringe areas may cause a major loss in natural storage of flood waters that may have a major impact by increasing flood heights downstream. Development of the flood fringe can also alter drainage patterns producing increased and faster run-off which can increase flood heights downstream. Finally, large amounts of fill in the fringe areas could cause a major loss to a community's environmental resources by disrupting the flood plain ecosystem. The following floodway schematic diagram prepared by FIA is helpful in comprehending the philosophy of floodway delineations.



A floodway is usually computed on the basis of equal conveyance reductions from each side of the flood plain. The results of the computations are tabulated at selected cross sections for each stream segment for which a floodway is computed. In the areas between cross sections the floodway boundaries are interpolated. Explained less technically, the floodway boundary is determined by squeezing in the flood plain boundary on the computer model of the flood plain until the base flood is raised 1 foot. This simulates the effect of building a wall from both sides of the flood plain toward the center of the river. The walls could be fill, structures, or any physical obstruction. The equal conveyance reductions or equal degree of encroachment rule is based on the legal need to treat similarly situated property owners in a similiar manner. The rule requires that the quantity of flood waters conveyed on both sides of the watercourse be reduced by an equal percentage when developing the encroached floodway boundary. Since the rule uses a quantity criteria, less surface area may be required on one side than the other if the velocity or depth of water on one side is greater than the other.

Flood Hazard Factors

In order to establish actuarial insurance rates, FIA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, flood hazard factors, and flood insurance zone designations for each flooding source studied in detail. Reaches are defined as lengths of watercourses having relatively the same flood hazard. The basis for determining whether areas have relatively the same flood hazard is the average weighted difference in water surface elevations between the 10-year and 100-year floods. If the average difference between the 10-year and 100-year floods is less than 2 feet, the variation may not exceed .5 feet for more than 20 percent of the reach. If the average difference is 2 to 7 feet, the variation may not exceed 1 foot for more than 20 percent of the reach. After the reaches are determined, flood hazard factors are utilized to correlate flood information with insurance rate tables. Historical correlations between property damage from floods and their flood hazard factors are utilized in setting actuarial insurance premium rate tables. The flood hazard factor for a reach is the average weighted difference between the 10-year and 100-year flood water surface elevations expressed to the nearest .5 feet and shown as a 3-digit code. Therefore, if the difference between the water surface elevations is .7 feet, the flood hazard factor is 005; if the difference is 1.6 feet, the flood hazard factor is 015; and, if the difference is 5.8 feet, the flood hazard factor is 060.

Flood Insurance Zones

After the determination of reaches and their respective flood hazard factors, the entire community is divided into flood insurance zones. Each zone has a specific flood potential or hazard.

Zone A contains the special flood hazard areas inundated by the 100-year flood. Zone A alone is used when the base flood elevations have not been determined. Zone AH contains areas of special flood hazards that have a shallow flood depth from 1 to 3 feet due to ponding. Zone AO contains areas having shallow flood depths from 1 to 3 feet due to sheet flow. Zone A99 contains areas where adequate progress has been made on a protection system to consider it complete for insurance rating purposes. The A zone is further subdivided from A1 to A30 according to the flood hazard factors within that zone. Therefore, zone A1 would have a flood hazard factor of 005, zone A2 a factor of 010, and zone A8 a factor of 040.

Zone B is an area of moderate flood hazard comprised of the areas between the special flood hazard areas and the limits of the 500-year flood, including areas of the 500-year flood that are protected from the 100-year flood by some form of flood control structure. Also included are some areas subject to certain types of shallow flooding where depths are less than 1 foot and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.

Areas of minimal flooding are designated Zone C and areas of undetermined but possible flood hazards are designated Zone D. Areas of special mudslide (Zones M, N, P, and C) and coastal high hazard areas (Zones V1-V30) are also included in the program, but have been excluded from this report since those types of hazards do not exist in the Larimer County area.

Limits of Coverage

The National Flood Insurance Program makes flood insurance available for all types of buildings, both publicly and privately owned, whether used for religious, residential, industrial, commercial, nonprofit, or agricultural purposes. The contents of such buildings may also be insured through the program. Flood insurance is required, in communities participating in the program, as a condition for the receipt of federal or federally-related financial assistance for construction or acquisition purposes in any area that has been designated by FIA as having special flood hazards. When a community is under the Emergency Program only the first layer of insurance can be purchased. After the FIRM is in effect and the community complies with the additional FIA requirements, the community becomes a member of the Regular Program. TABLE 2 provides information concerning the historical limits of coverage for both the Emergency and Regular Program. The National Flood Insurance Act of 1968 did not contain a 2 phased program. The Housing and Urban Development Act of 1969 created the Emergency Program and established the limits as shown in the table. These limits were increased by the Flood Disaster Protection Act of 1973 and again by the Housing and Community Development Act of 1977. In 1977 a special category was added for small businesses. This category has higher actuarial rate limits of coverage than other nonresidential for both the structures and contents.

TABLE 2

Historical Limits of Flood Insurance Coverage

Total Amount of Subsidized Insurance Available (First Layer)

	1969	1973	1977
Single Family Residential	17,500	35,000	35,000
Other Residential	30,000	100,000	100,000
Small Business	NA	NA	100,000
Other Nonresidential	30,000	100,000	100,000
Residential Contents	5,000	10,000	10,000
Small Business Contents	NA	NA	100,000
Other Nonresidential Contents	5,000	100,000	100,000

Total Amount of Actuarial Rate Insurance Available (Second Layer)

	1969	1973	1977
Single Family Residential	17,500	35,000	150,000
Other Residential	30,000	100,000	150,000
Small Business	NA	NA	150,000
Other Nonresidential	30,000	100,0000	100,000
Residential Contents	10,000	10,000	50,000
Small Business Contents	NA	NA	200,000
Other Nonresidential Contents	10,000	100,000	100,000

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 loan, the victim will be required to purchase flood insurance to protect his home against future flood damage.

Insurance Rates

Determining the cost of insurance or insurance rates is complex. The two most important criteria are the date construction began on the structure to be insured and the date FIA publishes the community's FIRM showing the location or the special flood hazard areas. Any structure in existence or under construction on the date FIA publishes the community's

FIRM will receive the subsidized rate for the first layer of coverage and continue to receive it in subsequent years.

After a community enrolls in the Emergency Program, property owners are eligible to purchase insurance at the subsidized government rates as shown in TABLE 3.

TABLE 3

Emergency Program Subsidized Policy Rates

	Annual Rate/$100 Coverage on Structures	Annual Rate/$100 Coverage on Contents
All Residential	$.25	$.35
All Nonresidential	$.40	$.75

Since only the first layer of coverage is eligible for this subsidized rate ($35,000 for 1-4 family residential, $100,000 for all other buildings, the maximum cost to the owner is $87.50 per year on a 1-4 family house, $250 per year on multifamily residential, and $400 per year on all non-residential structures. There is a minimum premium of $25 for flood insurance policies.

After the FIRM is published, purchase of insurance becomes mandatory in flood hazard areas in order to obtain a mortgage loan and property owners are now eligible to purchase a second layer of insurance. The second layer coverage in most cases is greater than the first layer (see TABLE 2). The insurance rates for the second layer are based on actuarial rates, therefore, they vary almost on a structure by structure basis. Although the rates are termed actuarial, they are kept low for single family homes in existence, or on which construction has started at the time the FIRM is published. The maximum rate for such property is $.50 per $100 of coverage or twice the rate of the subsidized layer of coverage.

If the actuarial rate is lower than the first layer subsidized rate, the actuarial rate will be used for both layers of insurance. Actuarial rates will be charged for flood insurance on buildings constructed after the FIRM is published. The greater the risk the higher the rate. The actuarial rate stipulation gives teeth to the program since some individuals are able to get variances to build below the 100-year flood elevation under certain circumstances, but the requirement to purchase insurance at actuarial rates provides a strong incentive not to build below the 100-year flood elevation.

The rates listed in TABLE 4 or FIA Zone Rate Table II apply to all buildings in a community in the Regular Program except those buildings in a community in the Regular Program except those buildings located in Zones A1-A30 (HUD, FIA, Flood Insurance Manual, 1978: p. B-3). For buildings in Zones A1-A30), FIA Zone Rate Table III is applicable. This table is prepared for residential and nonresidential structures by type of structure (1 story, 2 or more stories, split level, or mobile home on foundation). TABLE 5 is a copy of Rate Table III for a 1 to 4 family residential structure with 2 or more stories. Individuals should obtain surveys of their first floor elevation as the table's rates are based on the elevation of the first floor being above or below the base flood elevation. The nonelevation zone rate places the first floor elevation below the base flood elevation. Usually the first floor of a structure is significantly above the ground elevation and if the survey places it above the base flood elevation, the survey could be paid for in savings from 1 year's annual premium. If for example a $80,000 structure without a basement in Zone A-8 was surveyed and found to have its first floor elevation 1 foot above the base flood elevation, that structure could be insured

TABLE 4

RATE TABLE II
ZONE RATE TABLE

(Applicable Only for Communities in the Regular Program)
(Rates per $100 Insurance)

Zone rates apply to all buildings in a community in the Regular Program, except those buildings located in Zones A1-A30, and V1-V30. A building which was constructed or substantially improved on or before December 31, 1974, or before the initial effective date of the FIRM, whichever is later, may be insured for first layer amounts of insurance using Subsidized Rate Table I, if the payable premium is lower than one calculated using the following Zone Rates.

STRUCTURE—ONE- TO FOUR-FAMILY RESIDENTIAL

	Zone						
Type of Structure	A	AO	A99	B	C	D	V
One story—no basement	.10	.30*	.03	.03	.01	.20	.53
Two or more stories—no basement	.10	.25*	.02	.02	.01	.15	.45
Split level—no basement	.10	.25*	.02	.02	.01	.15	.45
One story—with basement	.20	2.00	.15	.15	.10	1.10	3.08
Two or more stories—with basement	.20	1.35	.10	.10	.10	.70	1.95
Split level—with basement	.20	1.35	.10	.10	.10	.70	1.90
Mobile home on foundation	.20	.65*	.15	.15	.15	.80	2.10

NOTE: The maximum actuarial rate payable by the insured on all 1-4 family residential structures is $.50 except for the first layer on new construction where the first floor elevation is below the base flood elevation.

CONTENTS—RESIDENTIAL

	Zone						
Location in Structure	A	AO	A99	B	C	D	V
All in basement	.70	26.00	2.60	2.60	.20	22.00	62.25
All on 1st floor	.35	.75*	.10	.10	.05	.50	1.35
All on 1st two or more floors	.30	.50*	.10	.10	.05	.35	.90
All on 1st floor and basement	.60	4.00	.40	.40	.10	3.00	8.48
All on 1st two or more floors and basement	.50	3.50	.35	.35	.10	3.10	8.85
All above 1st floor	.10	.05*	.01	.01	.01	.08	.23
All in mobile home on foundation	.35	.55*	.10	.10	.05	.75	2.03

*Use Zone B Rates for structures without basement located in Zone AO, where the first floor is 18 inches or more above the crown (highest point) of the nearest street.

Note: To determine rating procedures for zone AH, see Rate Table Selection.

TABLE 4 (con't.)

RATE TABLE II (Cont'd.)
ZONE RATE TABLE

All Other Structures

Type of Structure	**A**	**AO**	**A99**	**B**	**C**	**D**	**V**
One story—no basement	.30	.50*	.05	.05	.02	.30	.90
Two or more stories—no basement	.30	.40*	.04	.04	.02	.25	.75
Split level—no basement	.30	.40*	.04	.04	.02	.35	.68
One story—with basement	.40	3.30	.25	.25	.20	1.85	5.10
Two or more stories—with basement	.40	2.25	.15	.15	.15	1.15	3.23
Split level—with basement	.40	3.00	.15	.15	.15	1.25	3.23
Mobile home on foundation	.40	1.10*	.30	.30	.25	1.30	3.45

All Non-Residential Contents

				Zone			
Location in Structure	**A**	**AO**	**A99**	**B**	**C**	**D**	**V**
All in basement	1.50	39.00	3.90	3.90	.30	50.00	75.00
All on 1st floor	.75	1.10*	.10	.10	.10	.75	2.03
All on 1st two or more floors	.60	.75*	.10	.10	.10	.50	1.28
All on 1st floor and basement	1.25	6.00	.60	.60	.15	4.55	12.75
All on 1st two or more floors and basement	1.00	5.25	.55	.55	.15	3.20	8.85
All above 1st floor	.20	.08*	.01	.01	.01	.10	.30
All in mobile home on foundation	.75	.85*	.10	.10	.10	1.05	3.00

*Use Zone B Rates for structures without basement located in Zone AO, where the first floor is 18 inches or more above the crown (highest point) of the nearest street.

TABLE 5

FIA RATE TABLE III
ONE TO FOUR FAMILY RESIDENTIAL STRUCTURE
TWO OR MORE STORIES

ELEVATION OF FIRST FLOOR ABOVE (+) OR BELOW (−) BASE FLOOD ELEVATION (BFE)	NO BASEMENT				WITH BASEMENT			
	ZONES				ZONES			
	A1—A7	A8—A14	A15—A17	A18—A30	A1—A3	A4—A7	A8—A9	A10—A30
+ 4 OR MORE	.01	.01	.01	.01	.10	.10	.10	.10
+ 3	.01	.01	.01	.03	.10	.10	.10	.10
+ 2	.01	.02	.04	.07	.10	.10	.10	.10
+ 1	.01	.06	.08	.12	.54	.18	.16	.15
0 (1st fl. at BFE)	.10	.13	.15	.17	2.89	.53	.33	.24
− 1	.40	.25	.24	.26	8.15	1.37	.64	.37
− 2	1.32	.43	.36	.35	*	3.22	1.22	.54
− 3	*	.72	.52	.48	*	4.43	2.20	.76
− 4	*	1.14	.75	.61	*	*	3.67	1.07
− 5	*	1.79	1.05	.79	*	*	*	1.47
− 6	*	2.19	1.43	1.00	*	*	*	1.99
− 7	*	*	1.97	1.25	*	*	*	2.69
− 8	*	*	2.67	1.53	*	*	*	3.60
− 9	*	*	*	1.89	*	*	*	4.13
−10	*	*	*	2.32	*	*	*	*
−11 OR LOWER	*	*	*	*	*	*	*	*
NON-ELEVATION ZONE RATE	.29	.44	.55	.70	4.48	1.29	.91	.87

*USE $25.00 RATE.

NUMBERED V ZONE RATES = COMPARABLE NUMBERED A ZONE RATES + 50%.

at \$.06 per \$100 for both layers of coverage rather than at \$.25 for the first layer and \$.44 for the second. Further assuming the structure was insured for 80 percent of the \$80,000 value and contents at \$20,000, a savings of \$273.70 in premiums could be realized annually. Certainly all surveys will not yield such dramatic results, but since the rates vary so drastically with each 1 foot change in first floor elevations, the cost of a survey will probably be money well spent. To lessen the individual cost of surveys, FIA has established elevation reference marks in and near the flood plain of streams studied in detail such that no point is further than 2000 feet from the nearest mark.

Who Determines if Flood Insurance is Required

It is the lenders responsibility to determine if flood insurance is needed. Lenders must check the community's flood hazard boundary map or the FIRM, if available, in order to determine if the property is located, or will be located, in a special flood hazard area. If the property is not in a flood hazard area, flood insurance is not required by law. All structures in the community are eligible for flood insurance, but only those obtaining a loan in a special flood hazard area are required to obtain insurance. Once it has been determined that the property is in a hazard area, the lender must determine if the community is participating in the National Flood Insurance Program. If the community is participating in the program, borrowers must purchase flood insurance at least equal to the outstanding principal amount of the loan or the 1977 mandatory insurance limits, whichever is less (see TABLE 2). This insurance may be purchased from any licensed property and casuality insurance agent or broker.

If the community is not participating in the program, flood insurance is not required on private or conventional loans. In this instance, the lender must inform the borrower that federal financial disaster assistance for flood damage to buildings and contents will not be available since the community is not participating in the program. Also, FHA, VA, SBA, and other federally guaranteed or insured loans are prohibited. The lender must notify the borrower in writing or obtain written assurance from the seller or landlord that the borrower has been notified at least 10 days before loan closing that the property is located in a special flood hazard area and that disaster relief assistance will not be available.

The Standard Flood Insurance Policy

A copy of a standard flood insurance policy can be found in Appendix A. Briefly, flood insurance can be purchased for almost every type of walled and roofed building that is principally above ground. Mobile homes on a foundation are also included. Contents coverage may be purchased to insure the contents of any fully enclosed building. Property that is not insurable under the program includes: gas and liquid storage tanks; wharves; piers; bulkheads; growing crops; shrubbery; land; livestock; roads; and, motor vehicles.

All insurable direct losses due to flooding are covered. A flood is defined as a general and temporary condition of partial or complete innundation of normally dry land areas, from overflow of inland or tidal waters, or from the unusual and rapid accumulation or runoff of surface water from any source. The flood policy will not cover losses in progress which is a situation where flood damage to a structure or its contents had started prior to inception of the policy.

The insurance policy provides coverage at replacement cost only for single-family dwellings and only for those which are insured for 80 percent of the structure's replacement value at the time of loss or are insured to the maximum amount of insurance required. In all other cases adjustments will be based on the actual cash value of the item at the time of loss. In no case will the adjustment of a loss exceed the limits of coverage purchased. Also, there is a $200 deductible stipulation for both structural coverage and contents coverage.

An Update of Dlood Insurance Policies in Effect

In a report by James, Kreger, and Barrineau, they reported statistics concerning the amount of insurance in force, type of program, and total policies written for selected communities in Larimer and Weld Counties as of 31 March 1977 (James et. al., 1977: p. 14). This data is again reported in TABLE 6 along with an update of this information as of 30 April 1980. Increases and decreases since 31 March 1977 are shown in parentheses after the 30 April 1980 data. Every municipality that has entered the regular program since 1977 has had increases in the total policies written as well as increases in the total amount of insurance in force. All of the municipalities have progressed from the emergency to the regular program except for the suspension of Loveland and Greeley. Therefore, a new category S (suspended) was added under the column, type of program, for the 1980 data. Once the FIRM for a community is completed the community must comply with the FIA requirements, prior to the FIRM's scheduled effective date, or be suspended from the program. FIRM effective dates are shown, for the selected communities, in TABLE 7.

TABLE 6

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

Municipality	Total Amount of insurance in force ($1,000)	Type of Program Emergency (E) Regular (R)	Total Policies Written
Town of Estes Park	267	E	13
City of Fort 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
Regular Program	36,586	R	1,044
Emergency Program	114,028	E	3,725

Flood Insurance Policies in Effect in Colorado
through 30 April 1980
Total Amount and Type of Program

Municipality	Total Amount of insurance in force ($1,000)		Type of Program Emergency (E) Regular (R) Suspended (S)	Total Policies Written	
Town of Estes Park	2,642	(+2,375)	R	52	(+39)
City of Fort Collins	4,196	(+3,244)	R	92	(+53)
City of Loveland	0	(-194)	S	0	(-8)
Town of Wellington	2,335	(+955)	R	57	(+10)
Larimer County (unincorporated areas)	14,465	(+9,228)	R	341	(+164)
City of Greeley	400	(-118)	S	8	(-14)
Weld County (unincorporated areas)	1,682	(+1,023)	R	64	(+32)
Colorado Totals	429,368	(+278,754	E&R	9,522	(+4,753)
Regular Program	298,574	(+261,988)	R	5,715	(+4,671)
Emergency Program	130,794	(+16,766)	E	3,807	(+82)

TABLE 7

Effective Dates for Flood Insurance Rate Maps for Jurisdictions of Larimer County and Greeley and Unicorporated Weld County

Jurisdictions	Effective Dates
Town of Estes Park	17 January 1979
City of Fort Collins	16 July 1979
City of Loveland	1 September 1978
Town of Wellington	15 February 1979
Larimer County (Unicorporated areas)	2 April 1979
City of Greeley	16 July 1979
Weld County (Unincorporated areas)	18 March 1980

Loveland was suspended from the program on 1 September 1978. Since the suspension prohibits new policies from being written and old policies from being renewed, there are currently no flood insurance policies in effect in the City of Loveland. The City of Greeley was suspended effective 16 July 1979. TABLE 6 shows that 8 policies were still in effect as of 30 April 1980. All of these policies will expire on or before 16 July 1980. More details on the suspensions are included in the individual discussions on the flood insurance program in the cities of Loveland and Greeley in Chapter V.

Changes to the Flood Insurance Program Expected by 1 October 1980

A discussion with FIA's Insurance Servicing Contractor for Region VIII reveled that a number of changes and revisions will be made to the National Flood Insurance Program by the end of this fiscal year. A number of the revisions are still too preliminary for public release. Some of the more general revisions were briefly discussed. The definitions will be expanded upon in the new Flood Insurance Mannual. A flow chart will be included to assist insurance agents in getting to the appropriate section of the manual. Once in the appropriate section, all information and rates required to fill out the application form will be in that section rather than all grouped together in a rate section, as is the case now. A common application form will be used for the Emergency and Regular Programs rather than the yellow and green forms now used. The FEMA will reserve the right to review specific locations of specific buildings and make a determination as to the buildings' rateability. Also, insurance rates are expected to be completely revised to make them more in line with current costs.

V. THE FLOOD HAZARD AND FLOOD INSURANCE PROGRAM FOR SELECTED COMMUNITIES

The FIA office of FEMA in Denver was visited on two occasions to obtain information and interview FIA personnel. As a result of those visits TABLE 8 was prepared utilizing information provided by FIA. TABLE 8 contains estimates of population located in the 100-year flood plain by jurisdiction. It also includes the number of residential, commercial, and other structures located in the 100-year flood plain. The information in this table is significant in understanding the potential hazard in each of the communities. The City of Loveland has been suspended from the flood insurance program, but there is only 1 structure estimated to be in the 100-year flood plain and no new residential construction is occurring there. The City of Greeley is also suspended from the program. There are an estimated 274 residential structures and a population of 1100 within the boundaries of the 100-year flood plain. Therefore, for the City of Greeley the suspension is more significant than for Loveland. The residents of the flood plain are subject to flooding without being able to protect themselves through the purchase of flood insurance. Also, many residents of the flood plain will experience a great deal of difficulty selling their homes as banks prefer not to lend money for structures subject to flooding unless flood insurance coverage is purchased for the amount of the loan.

TABLE 8

Population and Structures Located in the Designated 100-year Flood Hazard Areas

Jurisdiction	Population	Residential	Structures Commercial	Other
Town of Estes Park	85	41	31	NA
City of Fort Collins	1,000	221	67	178
City of Loveland	2	1	15	9
Town of Wellington	339	111	1	50*
Larimer County (unincorporated areas)	2,000	600	50	NA
City of Greeley	1,000	274	NA	NA
Weld County (unincorporated areas)	1,500	520	30	275

*garages

Larimer County (unincorporated areas)

Larimer County is located in north-central Colorado. It is bounded by the Continental Divide to the west, Wyoming to the north, Weld County to the east, and Boulder County to the south (see Figure 1). The county encompasses 2,614 square miles with approximately 50 percent of the land area under public ownership. It is estimated that 2,000 people inhabit the unincorporated Larimer County 100-year flood plain (see TABLE 8). There are approximately 600 residential structures and 50 commercial structures. As of 30 April 1980, 341 flood insurance policies were in effect for approximately $14.5 million in coverage (see TABLE 6).

The following streams in Larimer County were studied in detail: Big Thompson River; North Fork Big Thompson River and 4 Big Thompson Tributaries; Long Gulch; Rabbit Gulch; Quillan Gulch; West Creek; Fox Creek; Dark Gulch; Devils Gulch; Bobcat Gulch; Cedar Creek; Cache La Poudre River; Box Elder Creek; Buckhorn Creek; Redstone Creek; Fall River; Fish Creek; Noel's Draw; Dickson Gulch; Dry Gulch; Miller Fork; Dry Creek; Dark Gulch; Glade Road Overflow; and, Fox Creek. It is not the intent of this paper to discuss all these streams in detail, however, a few of the more significat ones are briefly discussed.

The studied section of the Big Thompson River is 39 miles long. It originates high in the Rocky Mountains and flows easterly through the southern part of Larimer County. Channel gradients range from approximately 18 feet per mile near Loveland to 130 feet per mile through the upstream narrows. Floods occurred on the Big Thompson River in 1864, 1894, 1919, 1923, 1945, 1949, and 1976. Prior to the 1976 flood the greatest discharge recorded was 8,000 cubic feet per second in 1919. The 1976 flood generated a flood discharge of approximately 31,200 cubic feet per second and was

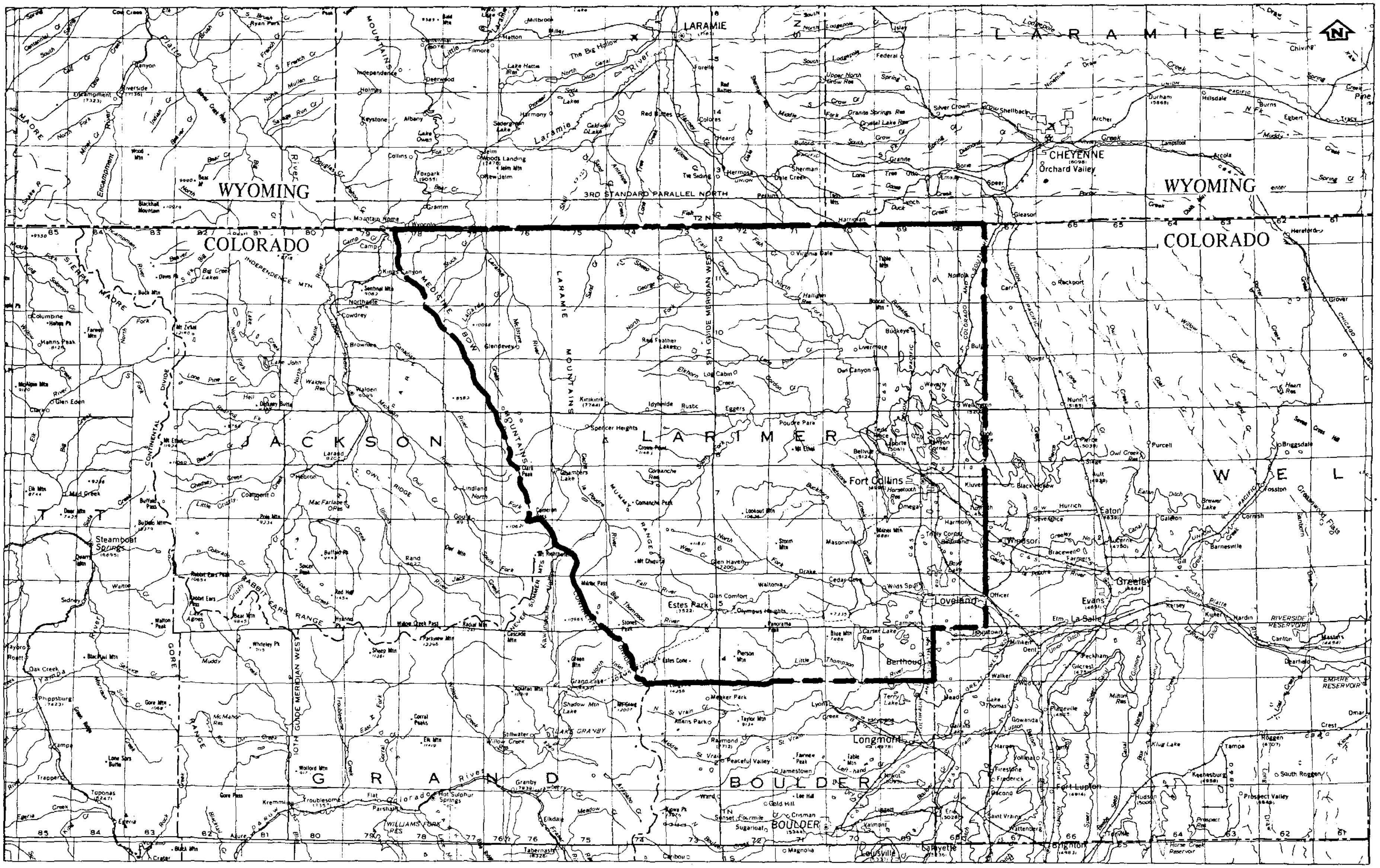


FIGURE 1

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Federal Insurance Administration

LARIMER COUNTY, CO

(UNINCORPORATED AREAS)

APPROXIMATE SCALE

16 0 16 32 48 MILES

VICINITY MAP

estimated to be a 300-year flood. It was by far the most significant flood in Larimer County and one of the nation's worst disasters. Prior to the flood, considerable residential development had taken place along the river banks including the narrow canyon area where the steep sides of the canyon preclude construction outside of the flood plain. The 25 mile long canyon was a heavily used scenic and convenient route from points east to Estes Park and Rocky Mountain National Park. The flash flood that occurred in 1976 claimed at least 139 lives and caused an estimated $56 million in damage. Water swept down the canyon at an average speed of 25 feet per second and the depth of water reached as much as 20 feet above grade level in the narrower areas of the canyon. It is estimated that at least 316 homes and cabins, 45 mobile homes, and 52 business structures were destroyed. Route 34 through the canyon and every bridge across the river were washed away. Although warnings were issued by state and county police, many people in the lower canyon area did not receive the warnings or failed to do anything because of the lack of rainfall in the lower canyon. Some attempting to drive out of the canyon were overtaken by the flood waters. Only those structures located on the inner bends survived. Prior to the flood, flood insurance had been available, but only one policy was in effect at the time of the flood. The federal government did provide $51 million of the $56 million cost of recovery through 29 different programs and 19 agencies. Apparently this was due to the skillful nonfederal efforts to obtain federal grants. After the flood there were two basic views as to what should be done. On the one hand, there was strong support for rapid and complete restoration. On the other, there was the view that the canyon should be set aside for open space thereby reducing the flood hazard in the future. Considerable land within the canyon was purchased by Larimer

County and the U. S. Forest Service, but public facilities were promptly restored and fewer but more expensive structures built. Overall the recovery process reflected a strong bias in public policy towards restoration of the status quo rather than mitigation of future flood hazards. Route 34 was reconstructed in its original alignment and elevation and was completed within six months entirely at a federal expense of $20 million. Recently the road has been reconstructed to elevate it above the 100-year flood level at further federal expense. Current federal philosophy is moving in the direction of mitigation of future flood hazards after catastrophic events like the Big Thompson flood. There are no structures on the Big Thompson River or its tributaries which provide a major reduction in floodflows.

Buckhorn Creek flows east and south through Larimer County and joins the Big Thompson River approximately 5 miles west of Loveland. The channel gradient of Buckhorn Creek is approximately 58 feet per mile. Floods on Buckhorn Creek occurred in 1923, 1938, 1948, and 1951.

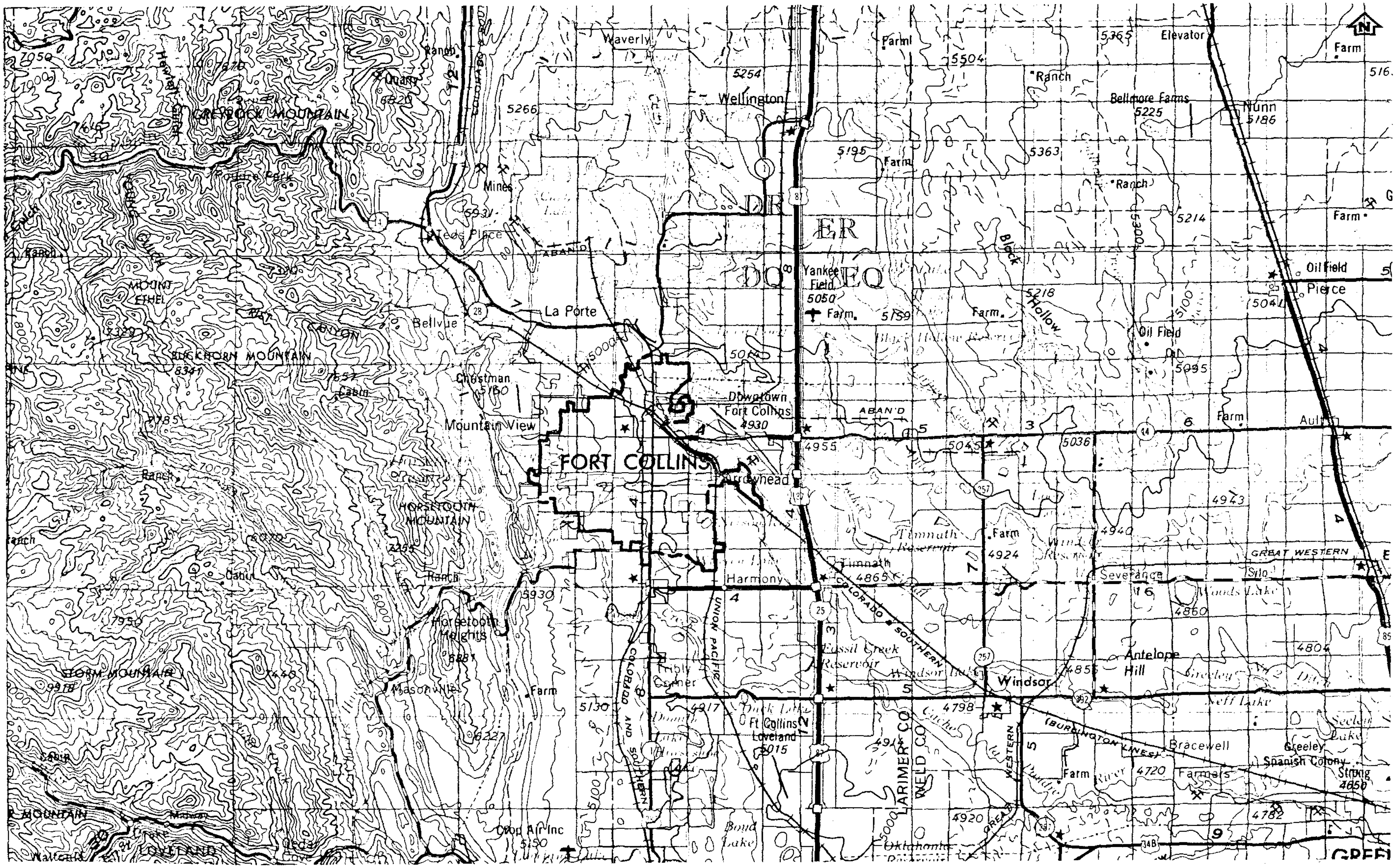
Box Elder Creek flows in a southerly direction through Larimer County past the west side of the Town of Wellington. It is approximately 32 miles long and flows from an altitude of 7,720 feet at its headwaters in Wyoming to 4,860 feet where it enters the Cache La Poudre River. Very little development has occurred in the flood plain within the county. There have been 13 floods recorded since 1900. A 1961 flood was estimated at a frequency of 50 to 100 years and 2 floods in 1976 were estimated at 25-year events. The U. S. Soil Conservation Service has proposed 3 detention structures 2 of which have been completed. When the third one is completed the flood hazards along Box Elder Creek will be virtually eliminated.

The Cache La Poudre River flows in a southeasterly direction through Larimer County. Development along the river is minimal with only a few residential and commercial structures. The channel is approximately 160 feet wide and 7 feet deep. Notable floods occurred in 1844, 1864, 1884, 1891, 1904, 1923, and 1930.

Larimer County has complied with the FIA requirements and is participating in the regular flood insurance program. In addition, the county is using more stringent criteria than required by FIA of a .5 foot increase in flood heights due to encroachment rather than 1 foot in their floodway delineations. The county also requires that the elevation of the lowest floor for any new development in the flood fringe areas be 1.5 feet above the 100-year flood elevation rather than at the 100-year elevation as required by FIA. Commercial development may in some cases obtain a variance to build at a lower elevation than the 1.5 feet above the 100-year flood elevation, but they are never allowed to build below the 100-year flood elevation. This is also a more stringent requirement as FIA allows commercial development below the 100-year flood elevation if the structure is flood proofed.

City of Fort Collins

The City of Fort Collins is located in eastern Larimer County approximately 60 miles due north of Denver (see Figure 2). It is currently one of the fastest growing cities in the country. Its population in 1975 was estimated at 56,800. The flood hazard in Fort Collins was studied by FIA for Spring Creek, Dry Creek, and the Cache La Poudre River. The main cause of floods in the area is intense rainfall which normally occurs in the period of May through September. Increased runoff from snowmelt can be a



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Federal Insurance Administration

CITY OF FORT COLLINS, CO

(LARIMER CO.)

APPROXIMATE SCALE

4 0 4 8 12 MILES

VICINITY MAP

FIGURE 1

factor in flooding on the Cache La Poudre River in May and June. It is estimated that approximately 1,000 people, 221 residential structures, 67 commercial structures, and 178 other structures such as garages are located within the boundary of the 100-year flood plains of the 3 basins studied. As of 30 April 1980, 92 flood insurance policies were in effect in Fort Collins for approximately $4.2 million in coverage.

The Spring Creek study reach is approximately 5.5 miles long and located in the southern half of the city. Flowing from west to east it generally follows Prospect Street. The basin is approximately 50 percent developed consisting primarily of residential development with some industrial development along Prospect Street and some commercial development along College Avenue (U. S. Highway 287). The Spring Creek channel averages 15 feet wide and 4 feet deep with a bottom channel gradient of approximately 31 feet per mile. Floods occurred on Spring Creek in 1902, 1904, 1938, 1949, and 1951. These floods were all prior to the completion of Horsetooth Reservoir which now cuts off the upper portion of the drainage basin. Minor flooding occurred in 1975 and 1977 since the reservoir's completion in the early 1950's. There are no flood control structures downstream of Horsetooth Reservoir although the City of Fort Collins is currently considering possible improvements.

The Cache La Poudre study reach in Fort Collins is approximately 6.3 miles long and flows southeasterly along an area north and east of Fort Collins. There are only a few residential and commercial structures located in the flood plain at the present time. The Cache La Poudre channel averages 160 feet wide and 7 feet deep with a bottom channel gradient of approximately 28 feet per mile upstream of State Highway 14 and 16 feet per mile on the downstream side. Floods occurred on this river in 1844, 1864, 1884, 1891, 1904, 1923, 1930, and 1938. The three largest floods were in 1864, 1891, and 1904 with flood peaks of approximately 21,000 cubic feet per second. The 1904 flood swept away 150 houses and destroyed all the bridges except one. There are no flood control structures on the Cache La Poudre River in the study area. There are two irrigation dams on the North Fork of the river, however, the effects are considered negligible in the study area.

The Dry Creek study reach is approximately 3.4 miles long. It is a tributary of the Cache La Poudre River and flows from the northwest in a southeasterly direction until it enters the Cache La Poudre River on the eastern corporate limits of Fort Collins. Development along the creek consists of sparsely populated farmland and rangeland north of Fort Collins and scattered residential development through the City of Fort Collins. The development has in some cases obliterated the historic channel and Jax Surplus is actually located in the channel area near College Avenue. Commercial and light industrial development in the basin is rapidly expanding near the confluence of the creek with the Cache La Poudre River. Residential development is occurring downstream of College Avenue and is expected to expand into the area north of U. S. Highway 287. Downstream of Fort Collins the channel is approximately 3 to 4 feet deep and 10 to 15 feet wide. The channel is basically nonexistent in the study area. The channel gradient is approximately 18 feet per mile. Dry Creek has not had a major flood in the Fort Collins area. This absence of even minor flooding is attributed to the vast network of irrigation canals and reservoirs that intercept some Dry Creek flows. Dry Creek has 11 major irrigation canals and 13 major lakes and storage reservoirs for irrigation which considerably reduce the contributing drainage to the area. Park

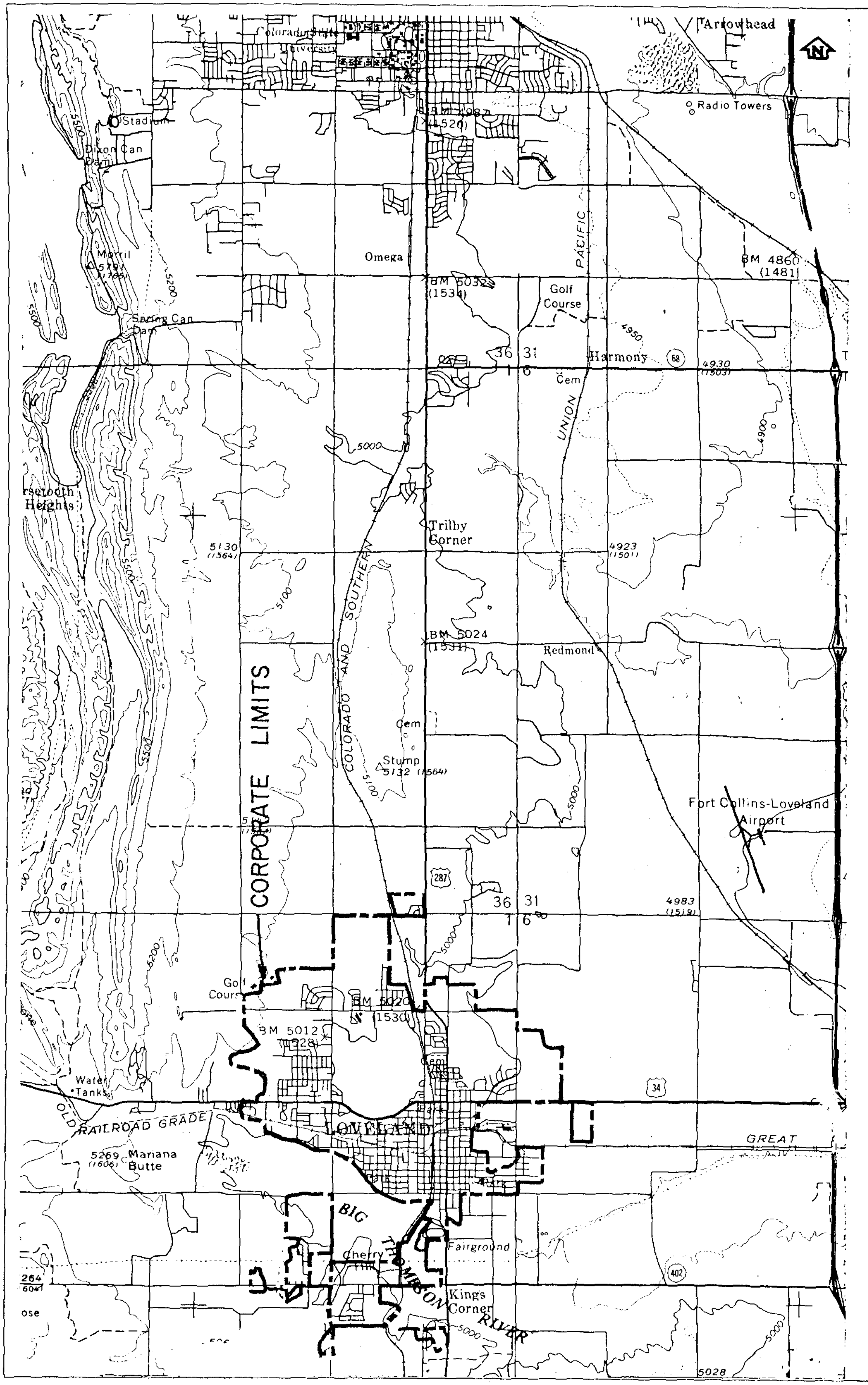
Creek Reservoir and Douglas Reservoir are on-stream reservoirs that intercept the creek. A study of Dry Creek sponsored by the City of Fort Collins, Larimer County, and the Colorado Water Conservation Board was done by Gingery Associates, Inc. and recommends as the first priority item a diversion of flows from Dry Creek to the Cache La Poudre River from an area just above Willox Lane. Also recommended are culvert improvements and channel improvements.

The City of Fort Collins has complied with the FIA requirements and is participating in the regular flood insurance program. In addition the city has taken the initiative to go beyond the Flood Insurance Study done by FIA. Their detailed analyses of Spring Creek and Dry Creek utilizing a full development assumption, in order to identify potential problems and develop comprehensive management plans for all the flood hazard areas in the city, is commendable. In addition some preliminary planning proposals of a quite unique nature are pending approval by the City Council. These proposals would place a fee on new development and a monthly charge on all residents of the city in an attempt to equitably distribute the costs for future flood control measures. The burden would be primarily on those causing the future hydrologic changes, but also to a lesser extent on those whose development has caused changes in the past. The city was also farsighted in its adoption of floodway criteria more stringent than what was recommended by FIA. The city adopted a floodway criteria which limits increases in flood heights due to encroachments in the flood fringe area of the flood plain to .5 feet. The FIA criteria limits such increases to 1 foot. Since the criteria adopted by Fort Collins is more stringent than the FIA criteria, FIA calculated the floodway based upon the .5 foot rise. The city also requires that the elevation of the lowest floor for any new development in the flood fringe areas be 1.5 feet above the 100-year flood elevation rather than at the 100-year flood elevation as required by FIA. The Dry Creek study has resulted in the city providing FIA with a revised delineation of the flood plain that is more restrictive to development than the FIRM provided by FIA.

City of Loveland

The City of Loveland is located in eastern Larimer County approximately 8 miles east of the mouth of the Big Thompson Canyon. It is approximately 42 miles due north of Denver and 8 miles south of Fort Collins (see Figure 3). Loveland has grown rapidly from a population of 9,734 in 1960 to 16,220 in 1970 and an estimated 23,653 persons in 1976. The Big Thompson River flows easterly through the southern part of Loveland. The river is steep and narrow in the canyon area upstream of Loveland. Once the river reaches the plains area upstream of Loveland it widens and has a meandering flow. The channel within Loveland is approximately 100 feet wide and 6 to 10 feet deep. The channel gradient is approximately 18 feet per mile. The flood plain is 2,000 to 3,000 feet wide and development consists of a fairgrounds and primarily commercial development.

Floods occurred in Loveland on the Big Thompson River in 1864, 1894, 1906, 1919, 1921, 1923, 1938, 1941, 1942, 1945, 1949, 1951, 1976, and 1980. The 1976 flood was approximately a 100-year event. The recent flooding in the Spring of 1980 was caused when a couple of irrigation head gates were washed out causing the irrigation ditches to flood. Also, the Big Thompson River changed its course and caused some unexpected flooding.



APPROXIMATE SCALE

5,000 0 5,000 10,000 15,000 20,000 25,000 FEET

VICINITY MAP

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

CITY OF LOVELAND, CO
(LARIMER CO.)

FIGURE 3

The Spring flooding caused damages to a trailer park and washed away one trailer and a home. Ironically much of the damage occurred in areas not identified as having a flood hazard.

At the time of the recent flooding there were no flood insurance policies in effect as Loveland has been suspended from the program since 1 September 1978. Loveland adopted the original flood plain ordinances, but disagreed with the FIA floodway delineation. The City Council decided to wait until the results of a county study to redo the floodway delineation was completed before implementing the FIA floodway requirements. That study has now been completed with minor differences identified. The current plan is to recommend that the City Council accept the original FIA floodway map in order to get back into the regular program and then work through FIA to make the appropriate floodway revisions.

It is estimated that approximately 2 people, 1 residential structure, 15 commercial structures, and 9 other structures are located within the 100-year flood plain. While Loveland has been suspended from the flood insurance program their flood plain ordinance has remained in effect. There has been no residential development in the flood plain during this time and commercial development that has occurred has met the required flood plain development criteria. A new commercial development did take place in the floodway, but only after a variance was received since the builder modified the channel in that area such that the development would not impede the 100-year flood flow. For the development that has taken place in the flood fringe areas, the city has required that the lowest floor be 1.5 feet above the existing 100-year flood elevation. Apparently even though the city has not been admitted into the regular program, they are managing development in the flood plain at least to the level required by FIA.

Town of Wellington

The Town of Wellington is located in the eastern part of Larimer County in northcentral Colorado. It is approximately 10 miles northeast of Fort Collins (see Figure 4). It had a population of 691 in 1970 and grew to an estimated 1200 in 1975. Flooding caused by Box Elder Creek and Coal Creek was studied in detail. Box Elder Creek flows southward through the western side of Wellington. Coal Creek channel ends north of Wellington and the water flows through agricultural fields until it enters the channel again in the southeast part of town. A floodway was not delineated for Coal Creek due to the shallow depth of flooding and the lack of a defined channel. There are no flood protection structures or any flood plain management measures within the Town of Wellington. Completion of the proposed U. S. Soil Conservation Service detention structures in the watersheds above Wellington will virtually eliminate the flood hazard for Wellington. Most of the flood plain development is residential and is located in the shallow flooding area of Coal Creek. There are approximately 111 residential structures, 1 commercial structure, and 50 garages located in the 100-year flood plain as well as an estimated 339 people. Wellington is currently in the regular flood insurance program and 57 policies were in effect for approximately $2.3 million in coverage as of 30 April 1980.

City of Greeley

The City of Greeley is located in the central part of Weld County in north-central Colorado. The city is approximately 50 miles north of Denver

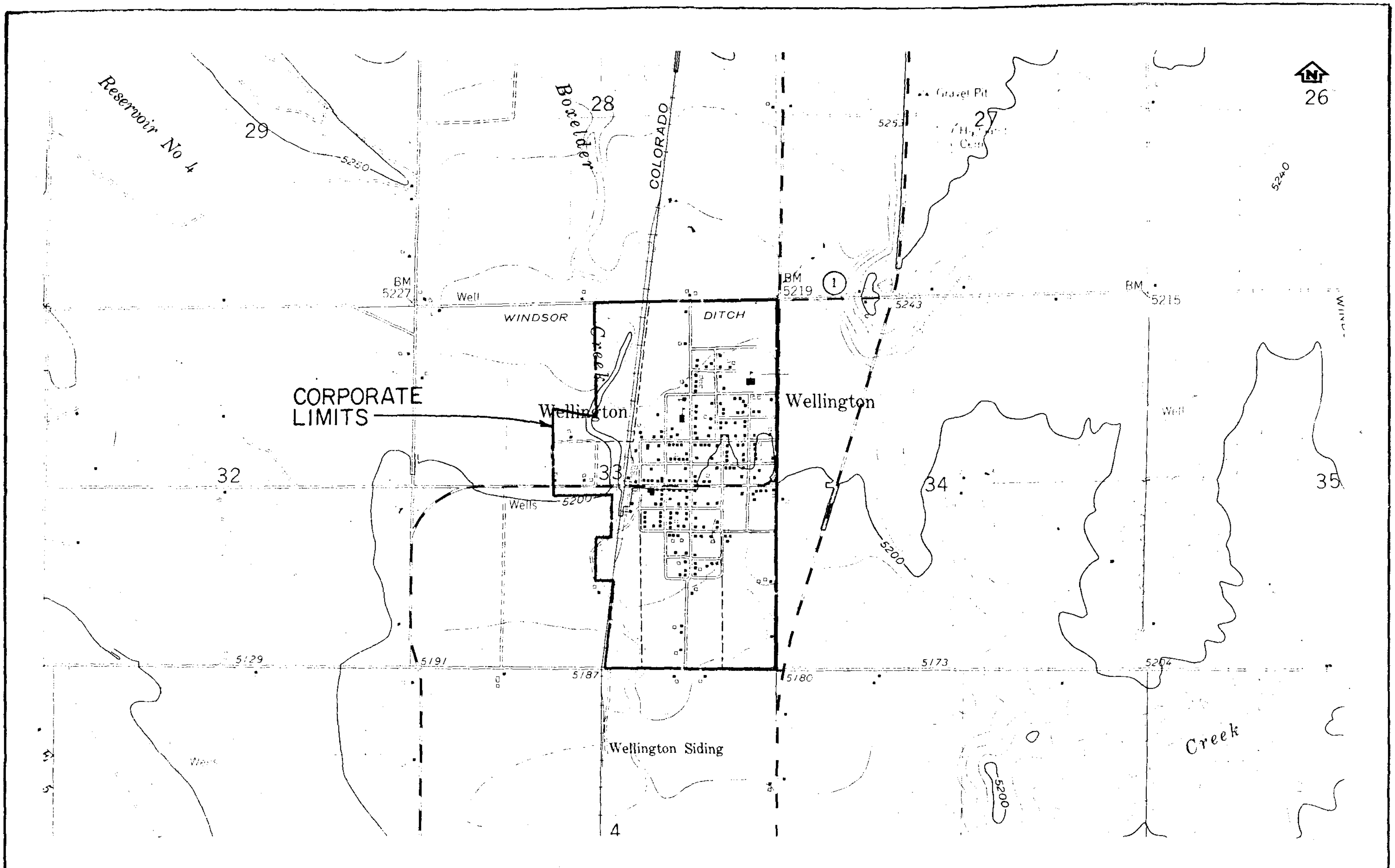


FIGURE 4

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWN OF WELLINGTON, CO
(LARIMER CO.)

4000 2000 0 4000 FEET
3000 1000 2000

VICINITY MAP

and 20 miles due east of Loveland (see Figure 5). Greeley has grown rapidly in recent years from a population of 38,900 in 1970 to approximately 66,000 at the present time.

The flood hazard in Greeley identified by FIA is 2.8 miles of the Cache La Poudre River which flows southeasterly through the northern part of the city. The channel gradient in this area is approximately 7.3 feet per mile. Major floods in the area are caused by intense rainfall from localized thunderstorms in May through September. Flooding potential is increased in May and June due to snowmelt. The worst flood on record occurred in 1917 and had a computed frequency of greater than 100 years with an estimated discharge of 13,000 cubic feet per second. Other floods occurred in the Greeley area in 1864, 1876, 1884, 1904, 1917, 1923, 1947, 1949, 1951, and 1965. The most recent flood was estimated at 11-years and the discharge was 3,480 cubic feet per second. There are no flood control structures within the study reach which would reduce flooding potential. Development along the river consists of commercial, industrial, and residential structures. Approximately 1,100 people and 274 residential structures are located within the boundary of the 100-year flood plain. As of 30 April 1980, there were only 8 flood insurance policies still in effect in Greeley as it was suspended from the FIA program on 16 July 1979 and the flood insurance policies may not be renewed under the suspension. At the time of this writing probably all policies have expired. The reason for the suspension was the refusal by the City of Greeley to accept the floodway map prepared by FIA due to the restrictions it would place on existing property owners with land or businesses located in the floodway area. In addition to the federally subsidized flood insurance no longer being available to residents of

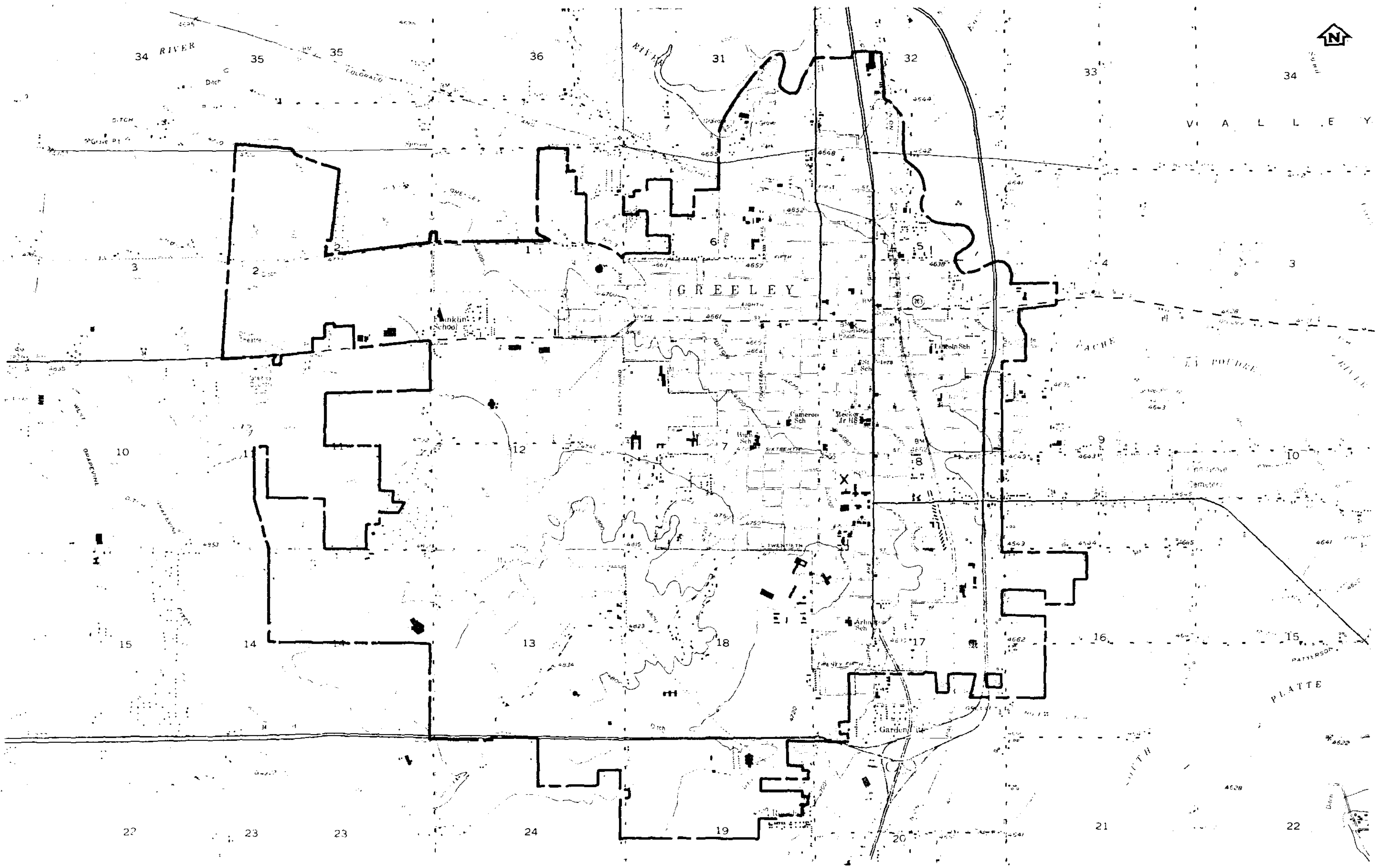


FIGURE 5

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

CITY OF GREELEY, CO

(WELD CO.)

APPROXIMATE SCALE

4000 0 4000 8000 12000 FEET

VICINITY MAP

Greeley, other sanctions also apply. As of 16 July 1979, no disaster assistance or other direct Federal assistance (including FHA or VA mortgage guarantees) can legally be provided for the acquisition or construction of buildings in the special flood hazard areas shown on the FIRM.

Based on interviews conducted in Greeley, apparently land owners in the designated floodway area had enough political power to significantly influence the decision by the city to not comply with the FIA floodway management requirements. Many land owners would bring suit against the city if the floodway designation were implemented. These land owners feel that the city would be taking away their development potential without just compensation. Similiar suits in other parts of the country have been generally decided by the courts in favor of the public right to regulate land use. Property that is restricted to its current use is not considered reduced in value and the potential development value of land cannot be considered as a basis for compensation (Lassey: 1977, p. 97). Residents of the flood fringe areas of the 100-year flood plain were apathetic toward the program and the decision by the city, but may not be so in the future. Interviews with loan officers of some of the Greeley banks revealed that many of the local banks would not be willing to give new mortgages to properties located in the designated hazard areas without flood insurance. Many existing home owners in the flood hazard areas will probably experience a rude awakening when it comes time to sell their homes unless the city takes the appropriate actions to get back into the program so that potential buyers are able to obtain loans.

The City of Gfeeley has no current plans or programs to lessen the flooding potential in the city. Due to the floodway controversy, the city has requested the Omaha District of the Corps of Engineers to prepare a more detailed study of the flooding situation. The study is scheduled to start in fiscal year 1981. The city is hoping that the new information resulting from the study will result in acceptable modifications to the FIA floodway delineation.

VI. PUBLIC RESPONSE TO THE FLOOD INSURANCE PROGRAM

This portion of the report serves to update 2 previous reports on the Flood Insurance Program as well as uncover new information concerning the public's response to the program. A 1976 report entitled "Implementation of the National Flood Insurance Program in Larimer County, Colorado" by Landenberger and Whittington and a 1977 report entitled "Factors Affecting Public Acceptance of Flood Insurance in Larimer and Weld Counties" by James, Kreger, and Barrineau are the reports updated. From now on they will be referred to as the Landenberger report and the James report respectively.

In order to update the findings of the previous reports and gain additional knowledge concerning the public's acceptance of the flood insurance program, extensive interviewing was done with community officials, real estate sales persons, real estate loan officers, insurance agents, and FIA employees. In general, the persons contacted were courteous and very helpful. Appendix B contains lists of the interviewees and lists of questions asked each group. It also describes the procedures followed in trying to determine the public's acceptance of the program.

Interviews with Community Officials

The Landenberger report identified some adverse reactions on the part of community officials to the flood insurance program. Some felt that the communities were being forced into the program with little or no say at the local level, others felt that the engineering studies were so poorly done that they didn't know for sure whether they had a flooding problem or not, and others felt they were obligated to protect the welfare of those citizens currently located in the flood hazard areas even though they disagreed with other aspects of the program. All reactions were not negative as one planner favorably viewed the program because it forced the community into much needed flood plain regulations, while another felt it was something that was here to stay and had to be dealt with.

In my interviews, there was a consensus on the part of the officials that the program is beneficial and should be fully supported. This does not mean that the citizens of all these communities or certain influential landowners of flood plain lands are supportive of the program. While the officials in some communities feel the program is beneficial, they also realize that since the climate in their community is adverse to the program, with few if any advocates of it, it is not wise to create political controversy until a larger coalition of support builds.

Many of the past disagreements concerning the inadequate and poorly done engineering studies have now been resolved. In most cases, the original studies were supported by the more detailed recent studies. In some cases significant changes were made. The City of Loveland chose not to enter the regular phase of the program until the results of a County study to redo the floodway delineation was completed, since the FIA floodway delineation was felt to be in error. That study has been completed now with minor differences identified. The city could have accepted the original FIA delineations and if the county study resulted in appropriate revisions, then work through FIA to revise the floodway. That way its citizens could have continued their flood insurance coverage and some people might have been insured against the damages that resulted from the recent Spring flood.

Interviews with Real Estate Sales Persons

The Landenberger report stated that members of the Fort Collins Board of Realtors are required to fully and truthfully inform perspective buyers of any and all flood threats associated with a land sale. They are not excused for ignorance and have an obligation to know of the latest information concerning flood hazards. Also, the multiple listing service designates whether or not each listing is in a designated flood hazard area.

In recent interviews with some real estate sales persons, they verified that this situation has not changed and provided a copy of a multiple listing form which specifically asks the question of whether flood insurance is required. One person told me he depends on the seller to inform him of whether flood insurance is required. If it is, but the seller is not aware of the requirement, he figures someone else will catch it or eventually the lender will. While with this type of approach it is possible for the potential purchaser to be unaware of the flood hazard until he or she trys to obtain a loan, real estate loan officers stated that people are almost always aware of the flood hazard prior to applying for a loan.

Interviews With Real Estate Loan Officers

In the Landenberger report, it was stated that bankers were generally aware of the program, but had a poor understanding of the technical aspects of it. I found this no longer to be the case. Real estate loan officers are now well versed on the program and its requirements as well as having a good understanding of the technical aspects of it. Some of the loan officers admitted having difficulty in locating some properties on the FIRM as often many streets are missing. In most cases the appraisor is heavily relied upon to inform the loan officer if the property is located in a flood hazard area.

The Landenberger report stated that generally people were unaware that a property was subject to flooding until told by the lenders when they were trying to obtain a mortgage. As mentioned previously, my interviews with loan officers revealed that people are almost always aware of the flood hazard now prior to applying for a loan. This shows that public awareness is increasing over time and real estate sales persons are doing a better job of informing the public of flood hazard areas then they did in the past.

The Landenberger report revealed that lenders felt it would not be worth their while to investigate all their outstanding loans made prior to the enactment of the flood insurance program to determine which ones were for structures located in flood hazard areas. Of course even if they determined that a structure was located in a flood hazard area, they could not require the owner to purchase insurance. The owner could be informed of the hazard and if flood insurance was subsequently purchased, the lender's investment would be protected as well as the owners. This situation has not changed. Loan officers have not considered such an undertaking and would not be willing to do so. They feel that very few structures in hazard areas without flood insurance would be identified and since a loan turns over approximately every 7 years, eventually most structures will be covered.

Another finding of the Landenberger report was that borrowers do not seem to object to the flood insurance requirement. They do not back out of the deal when informed that flood insurance is required. Apparently time has not changed this finding as none of the officers I interviewed had ever had a person applying for a mortgage refuse to get flood insurance as a condition for the mortgage. Generally, loan officers felt the borrowers considered it just another federal requirement that had to be complied with.

Interviews With Insurance Agents

Both the Landenberger and the James reports researched the response of insurance agents to the flood insurance program. Both reports found the agents to be unenthusiastic about the program. This situation has not changed. Generally the agents feel as if they are providing a service in selling the flood insurance. Many of the agents feel the writing of the policies is complicated and confusing and since so few policies are written in a year, they must review certain requirements each time they write a new policy.

Both reports stated that insurance agents feel it is not worth their time to promote the sale of flood insurance. The James report found that only 11 percent of the policies were written as a result of agents contacting customers. Now, the insurance agents I interviewed all stated that they sell flood insurance only when contacted by a client. Agents do not try to contact people in flood hazard areas in order to sell flood insurance, because most people are just not interested unless it is required.

The James report found that most of the flood insurance business the insurance agents have is because people are required to obtain the insurance as a condition in obtaining a mortgage. My interviews indicate that this situation has not changed. Very few people purchase flood insurance if they are not required to.

Both reports identified an attitude on the part of the public that "it can't happen to me." The James report concluded that this was the primary reason why more flood insurance policies are not sold. The James report also stated that some insurance agents felt that flood insurance was too costly to homeowners. The Landenberger report stated that persons located outside of the identified flood hazard boundaries feel they are not subject to flooding. The majority of the loan officers and the insurance agents I interviewed felt that the "it can't happen to me" attitude on the part of the public was the primary reason the program has not been more successful. Also, very few individuals located outside of the identified 100-year flood boundaries purchase flood insurance. This indicates that most people probably do not perceive the flood hazard since they could obtain flood insurance at very low rates of from $.02 to $.15 per $100 coverage depending on the type of structure, but do not. This points to the need for an educational program to inform people located outside the 100-year flood plain that they can still be subject to flooding. This is especially important in areas like the Big Thompson Canyon where the flows are restricted to a narrow area. The different levels of flooding are much more hazardous than for most flood hazard areas due to the higher elevation and greater velocity of the flood waters. The 1976 flood on the Big Thompson was estimated to be a 300-year event and resulted in flood elevations as much as 20 feet above grade level and velocities averaging 25 feet per second in the canyon area. Concerning the James report conclusion that flood insurance is too costly to homeowners, none of the insurance agents I interviewed felt the flood insurance premiums were too high.

The James report stated that approximately 31 percent of the insurance agents updated their clients existing homeowners policies on an annual basis in order to add flood insurance. Almost all the agents I interviewed said they updated their clients' homeowners policies on an annual basis, but none did so in order to add flood insurance.

The James report found that the majority of the agents felt the commission rates, of $10 per policy or 15 percent of the annual premium which ever is greater, were fair. All of the agents I interviewed felt the rates were fair since they were comparable to the commissions the agents receive on other business.

Interviews With FIA Personnel

One of the key findings of the James report was that if more flood insurance is to be sold, the public must become more informed about the program and how it relates to them. The James report also questioned whose responsibility it was to inform the public. The situation now is FIA feels it is their responsibility to sell the program to the public. A number of advertisements and announcements have been made by FIA to get the information to the public. Also, FIA conducts extensive training workshops for insurance agents to educate them on the program.

In the Spring of 1980, there were numerous advertisements made in Larimer County concerning flood insurance as well as minor flooding in some areas. For that reason I obtained information from FIA concerning the number of flood insurance policies in effect on 31 January 1980 and 30 April 1980 in order to determine if there was any change. There were 341 policies in effect on both dates. In April of 1979 there were 340 policies in effect.

The current organizational structure of FEMA is Plans and Preparedness (P and P), FIA, and Disaster Response and Recovery (DRR). P and P used to be Defense Civil Preparedness Agency (DCPA) and DRR used to be Federal Disaster Assistance Administration (FDAA).

An administrative decision by FIA to not have CNA represent the insurance companies anymore is expected to save the federal government $20 million over a 2 year period. FIA now deals directly with insurance agents and has contracted with Electronic Data Systems (EDS) to perform a servicing function for FIA.

The Landenberger Report expressed a concern over designating specific floodways given the ability of many rivers to meander over time. FIA performs an audit of each community every 5 years to update this situation as well as to determine whether enforcement is occurring. By identifying certain portions of the flood plain as floodway, significant expenditures may be required in some locations in the future to train rivers to the designated floodway.

One of the underlying philosophies of the flood insurance program is that eventually flood insurance will replace disaster relief. The FIA personnel interviewed felt this was still a long way off.

FIA has two options that can be used in acquisition of flood plain lands and structures in order to mitigate future damages. The options are only appropriate for an area that has just suffered from a flood. They cannot be used to mitigate future damages prior to any flooding.

These options are called constructive total loss and condition N. The constructive total loss option is used when damage to a structure is so great that for a little additional money the structure may be purchased and raised in order to mitigate future damages in lieu of repairing the structure so that it can again be damaged in the futre. The condition N option has never been used. It is a policy stipulation where FIA can negotiate with the insured to buy them out after a flood.

Disaster assistance is unavailable to communities suspended from the program, however, if after a disaster a community agrees to join the program, they may receive disaster assistance for the current disaster. Also, if a community is participating in the program, individuals who do not have flood insurance may receive disaster relief if they agree to purchase flood insurance in the future. If they do not renew their flood insurance policy in the future, they will no longer be eligible for future disaster assistance.

Other Observations Concerning the Flood Insurance Program

In addition to the updated items from the Landenberger and James reports, my interviews uncovered a few additional interesting things. The majority of the real estate loan officers stated that people required to purchase flood insurance just purchase the amount of coverage the bank requires them to. Usually the loans are for 80 percent so that the coverage is adequate. The bank is only interested in protecting its investment so only informs the borrower how much insurance is required and does not recommend or discourage additional coverage. Many times the borrower just purchases structure coverage and not contents coverage. The bank only requires coverage for the structure and many insurance agent don't push it, but rather try to save their client money. Some insurance agents encourage their clients to carry the same flood insurance coverage as their homeowners coverage. It is important to carry at least 80 percent coverage so that if a loss occurs it will be reimbursed based on replacement value and not be depreciated.

When it comes time to renew a flood insurance policy, most poeple do not raise their coverage as they do on their homeowners policy. I feel the attitude of the insurance agents greatly influence this decision. One insurance agent said she just assumes the client will want to maintain the same level of coverage as on the homeowners policy so she writes it up that way and the clients rarely question it. Other agents feel they are saving their clients money by not raising the flood insurance coverage.

A few agents indicated that their clients renew their homeowners policy but do not renew their flood insurance coverage after a year or two even though the bank requires them to carry flood insurance. When I went back and spoke with the bankers concerning this they all told me it had never happened to them. If it did happen, some said they would call the mortgage loan if the borrower refused to purchase the insurance. Others said they would contact an insurance agent and have a policy written and then send the bill to the mortgagee. One banker said it couldn't happen at his bank because they require the flood insurance money to be paid into an escrow account so that the money is available at time of renewal. I have no factural evidence to support the insurance agents' claims that some people are getting around the program requirements by not renewing their policies. The insurance agents who reported this fact were unwilling to divulge their clients name or the bank dealt with.

In the cities of Loveland and Greeley it was interesting that most of the bankers and insurance agents interviewed did not know why their city had been suspended from the program. The bankers indicated that they were in full agreement with the philosophy of the flood insurance program and felt that it was in the banks best interest to have the cities participating in the program. None of the banks indicated they had tried to put any pressure on their respective cities to comply with the FIA requirements and get back into the program.

In 1977, the 1973 Flood Disaster Protection Act was revised to allow banks to make conventional loans to persons purchasing structures in flood hazard areas who are unable to purchase flood insurance, due to their communities nonparticipation in the flood insurance program. The loan officers interviewed in Greeley and Loveland indicated they would not loan mortgage money to persons purchasing homes in flood hazard areas unless flood insurance were purchased. While it may be possible to purchase flood insurance in the private market, I am sure the expense in most cases would be prohibitive. According to the loan officers I interviewed, this situation has not yet occurred. In Loveland there is only 1 residential structure in the 100-year flood plain. In Greeley there are approximately 274 structures, but the city has only been suspended from the program for about a year so probably few sales of homes in the 100-year flood plain have occurred. In the future the city may start getting pressured to get back into the program. Homeowners in the 100-year flood plain will be extremely limited in finding prospective buyers unless mortgage money becomes available.

The majority of the insurance agents indicated that they found it very difficult to deal with FIA. Because of the complicated nature of the program and the fact that so few policies are written, very few policies are done right the first time. If anything is wrong, the whole policy gets sent back. If the rates are figured inappropriately and too much has been paid, rather then sending a refund, the check is sent back and a new one must be issued.

VII. CONCLUSIONS

In updating the Landenberger and James reports, it became obvious that the National Flood Insurance Program has continued to make progress since the 1973 Flood Disaster Protection Act. There is a greater awareness and understanding of the program on the part of all involved.

As a result of the information gathered in the interviews I conducted with community officials, it became apparent that communities are more receptive to the philosophy of trying to mitigate future flood damages through sound flood plain management techniques. Also, there was a concensus on the part of the community officials interviewed that the flood insurance program is beneficial and should be fully supported. Officials in Greeley are avoiding political controversy by not participating in the program until a larger coalition of public support builds. Finally, many of the past disagreements concerning the inadequate and poorly done engineering studies in the different communities have now been resolved through more detailed studies recently completed.

Real estate sales persons have become more effective in informing perspective buyers of flood hazard areas. The multiple listing form used states whether or not each listing is in a flood hazard area.

Real estate loan officers interviewed stated that people are almost always aware of the flood hazard now prior to applying for a loan. The loan officers are supportive of the program as they feel it is in the lender's best interest. They are also well versed on the program and its requirements and have a good understanding of its technical aspects. In most cases, however, the appraisor is heavily relied upon to inform the loan officer if the property is located in a flood hazard area.

While the loan officers are effectively implementing the flood insurance program for new mortgages and development in flood hazard areas, they feel it is not worth their time to investigate all their outstanding loans made prior to the enactment of the flood insurance program to determine which ones were for structures located in flood hazard areas. The loan officers also do not encourage or discourage coverage in excess of the amount of the loan. Borrowers do not object to the flood insurance requirement in that they do not back out of a deal when informed that flood insurance is required. The loan officers interviewed in the suspended cities of Loveland and Greeley indicated they would not loan mortgage money to persons purchasing homes in flood hazard areas unless flood insurance is purchased. None of these banks indicated they had tried to put any pressure on their respective cities to comply with the FIA requirements and get back into the program.

Interviews with insurance agents revealed that they are still not enthusiastic about the program and feel it is not worth their time to promote the sale of flood insurance. Also, agents indicated it is very difficult to deal with FIA. Changes are being made by FIA to simplify the writing of insurance by the agents. I feel this will only solve part of the problems as many of the agents do not believe in the value of the program. Generally the agents feel they are providing a service in selling flood insurance and sell the insurance only when contacted by a client. The public generally does not purchase flood insurance unless the bank requires it in order to obtain a mortgage loan. People still have the attitude that "it can't happen to me". Those outside of the 100-year flood plain feel they are not subject to flooding and therefore very few purchase flood insurance. This points to the need for an educational program to inform people outside the 100-year flood plain that they can still be subject to flooding. Also, 100-year flooding in some areas is more hazardous than in others due to the topography of the flood plain. The insurance agents feel both the flood insurance commission rates and premiums are reasonable.

Interviews with FIA personnel revealed that FIA feels it is their responsibility to sell the program. Advertisements in Larimer County in the Spring of 1980 did not result in increased flood insurance policies. FIA personnel interviewed felt that the philosophy of flood insurance eventually replacing disaster relief is still a long way off.

Communities who have postponed their decisions about participating in the program until more detailed engineering studies are done will be unable to use this as an excuse for not making a decision as the studies are completed and discrepancies solved. Suspension of Loveland and Greeley from the program has not become a major issue. It may when residents of the 100-year flood plain are unable to sel their homes due to the unavailability of mortgage money.

Other observations are that borrowers generally only purchase the amount of flood insurance required by the lender unless the insurance agents recommend higher coverage which few do. In addition, many do not purchase contents coverage. Also, those who renew their flood insurance policies usually do not increase their coverage as they do on their homeowners policies. This decision too appears to be greatly influenced by individual insurance agents. It is apparent that for most people located in designated flood hazard areas obtaining a survey of their first flood elevations is usually money well spent. Usually the first flood elevation of a structure is significantly above the ground elevation and if the survey places it above the base flood elevation, the survey could be paid for in savings from one year's annual premium. There was a problem identified by a few insurance agents that many people do not renew their flood insurance after a year or two even though the bank had required them to purchase it in obtaining their mortgage. This problem was not verified by any loan officers interviewed and further research would be necessary to accept this as a factual conclusion.

Finally, there is a personal concern that by identifying certain portions of the flood plain as floodway, significant expenditures may be required in some locations in the future to train meandering rivers to the designated floodway.

REFERENCES

Baker, Earl J., and McPhee, Gorden, Land Use Management and Regulation in Hazardous Areas: A Research Assessment, Institute of Behavioral Science, The University of Colorado, Boulder, Colorado, 1975.

Beyer, Jacquelyn L., "Global Summary of Human Response to Natural Hazards: Floods," in Natural Hazards: Local, National, Global, ed. Gilbert F. White, Oxford University Press, New York, 1974, pp. 265-274.

Brinkmann, Waltraud A.R., Hurricane Hazard In The United States: A Research Assessment, Institute of Behavioral Science, The University of Colorado, 1975.

Brinkmann, Waltraud A.R., Severe Local Storm Hazard In The United States: A Research Assessment, Institute of Behavioral Science, The University of Colorado, 1975.

Burton, Ian, Kates, Robert W., White, Gilbert F., The Environment As Hazard, Oxford University Press, New York, 1978.

Cochrane, Harold C., Natural Hazards and Their Distributive Effects, Institute of Behavioral Science, The University of Colorado, Boulder, Colorado, 1975.

Comptroller General of the United States, National Attempts To Reduce Losses From Floods By Planning For and Controlling The Uses of Flood-Prone Lands, March 7, 1975.

Congress of the United States, Office of Technology Assessment, Issues and Options in Flood Hazards Management, March 21, 1978.

Dacy, Douglas C., and Kunreuther, Howard, The Economics of Natural Disasters, The Free Press, New York, 1969.

Executive Office of the President, Office of Emergency Preparedness, Disaster Preparedness, U. S. Government of Printing Office, January, 1972.

Federal Emergency Management Agency, Economic Feasibility of Floodproofing-Analysis of a Small Commercial Building, U. S. Government Printing Office, June, 1979.

Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Weld County Colorado Unincorporated Areas and Town of Eaton, Colorado, Weld County, September, 1979.

Federal Emergency Management Agency, Flood Emergency and Residential Repair Handbook, U. S. Government Printing Office, October 1979.

Federal Emergency Management Agency, National Flood Insurance Program Community Status Book.

Federal Emergency Management Agency, The Floodway: A Guide for Community Permit Officials, No. 4, Community Assistance Series, September 1979.

Federal Emergency Management Agency, Questions and Answers on the National Flood Insurance Program, U. S. Government Printing Office, 1979.

Federal Register, "Evaluation of Beneficial Contributions to National Economic Development for Flood Plain Management Plans", Volume 40, Number 115, June 13, 1975.

Federal Register, "Evaluation of Nonstructural Measures", Volume 44, Number 102, May 24, 1979.

Federal Register, "Floodplain Management Guidelines", Volume 49, Number 29, February 10, 1978.

Federal Register, "National Flood Insurance Program", Volume 41, Number 207, October 26, 1976.

Federal Register, "National Flood Insurance Program, Standard Flood Insurance Program", Volume 43, Number 11, January 17, 1978.

Flood Disaster Protection Act of 1973, Public Law 93-213, 31 December 1973.

Gingery Associates, Inc., Dry Creek Drainageway Planning, January 1980.

Grigg, Neil S., Botham, Leslie H., Rice Leonard, Shoemaker, W. J., Tucker L. Scott, Urban Drainage and Flood Control Projects Economic, Legal and Financial Aspects, July 1975.

Grigg, Neil S., Rice, Leonard R., Botham, Leslie H., Shoemaker, W. J., Evaluation and Implementation of Urban Drainage and Flood Control Projects, June, 1974.

Healy, Richard J., Emergency and Diaster Planning, John Wiley and Sons, Inc., New York 1969.

Housing and Urban Development Act of 1969, Public Law 91-152, 24 December 1969.

James, Joel W., Kreger, Joel B., Barrineau, R. Dru, Factors Affecting Public Acceptance of Flood Insurance in Larimer and Weld Counties, September, 1977.

Kunrether, Howard, Disaster Insurance Protection Public Policy Lessons, ed. John Wiley and Sons, Inc., New York 1978.

Kusler, Jon A., Floodplain Acquisition: Issues and Options in Strengthening Federal Policy, October, 1979.

Landenberger, Dwayne A., Whittington, Howard M., Implementation of the National Flood Insurance Program in Larimer County, Colorado, September, 1976.

Lassey, William R., Planning in Rural Environments, McGraw-Hill, New York, 1977.

Mileti, Dennis S., Disaster Relief and Rehabilitation in the United States: A Research Assessment, Institute of Behavioral Science, The University of Colorado, 1975.

NAHB Research Foundation, Inc., Manual For The Construction Of Residential Basements In Non-Coastal Flood Environs, March, 1977.

National Flood Insurance Act of 1968, Public Law 90-448, 1 August 1968.

Owen, James H., Guide For Flood and Flash Flood Preparedness Planning, May 1977.

Platt, Rutherford, Options to Improve Federal Nonstructural Response to Floods, December 1979.

Research Group Inc., Methods Used By Federal Programs To Reduce Flood-plain Development Pressures, May 1978.

Shabman, Leonard A., Improved Formulation and Evaluation of Nonstructural Elements For Water Resources Plans in Flood Hazard Areas, October, 1979.

Slovic, Paul, Kunreuther, Howard, and White, Gilbert F., "Decision Processes Rationality, and Adjustment to Natural Hazards", in Natural Hazards Local, National, Global, ed. Gilbert F. White, Oxford University Press, New York, 1974, pp. 187-205.

Sorensen, John H., Ericksen, Neil J., Mileti, Dennis S., Landslide Hazard In The United States: A Research Assessment, Institute of Behavioral Science, The University of Colorado, 1975.

Sorensen, John H., Mitchell, J. Kenneth, Coastal Erosion Hazard In The United States: A Research Assessment, Institute of Behavioral Science, The University of Colorado, 1975.

United States Department of the Army Office of the Chief of Engineers, A Perspective on Flood Plain Regulations For Flood Plain Management, June 1, 1976.

United States Department of the Army, Office of the Chief of Engineers, Evaluation Of Beneficial Contributions to National Economic Development For Flood Plain Management Plans, 13 June 1975.

United States Department of the Army, Corps of Engineers, Omaha District, Flood Plain Information Report, Big Thompson River, Loveland Colorado, December 1971.

United States Department of the Army, Corps of Engineers, Omaha District, Flood Plain Information Report, Cache La Poudre River, Volume I, Larimer County, Colorado, October 1973.

United States Department of the Army, Corps of Engineers, Omaha District, Flood Plain Information Report, Cache La Poudre River Volume II, Greeley-Weld County, Colorado, March, 1974.

United States Department of the Army, Corps of Engineers, Omaha District, Flood Plain Information Report, Cache La Poudre River, Volume III, Fort Collins-Greeley, Larimer-Weld County, Colorado, October 1975.

United States Army Engineer District, Pittsburgh, Pa., Floodproofing Regulations, June, 1972.

United States Army Corps of Engineers, St. Paul District, The Development of Nonstructural Alternatives, May, 1979.

United States Department of Housing and Urban Development, Coordination During Flood Insurance Studies, No. 2, Community Assistance Series, March, 1979.

United States Department of Housing and Urban Development, Entering the Regular Program, No. 3, Community Assistance Series, November 1978.

United States Department of Housing and Urban Development, Federal Insurance Administration, Elevated Residential Structures-Reducing Flood Damage Through Building Design: A Guide Manual, September 1976.

United States Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Manual, 1978.

United States Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study Larimer County Colorado, Unincorporated Areas, September 1978.

United States Department of Housing and Urban Development, Flood Insurance Study-Town of Estes Park, Colorado Larimer County, July 1978.

United States Department of Housing and Urban Development, Flood Insurance Study-City of Fort Collins, Colorado Larimer County, January 1979.

United States Department of Housing and Urban Development, Flood Insurance Study-City of Greeley, Colorado, Weld County, January 1979.

United States Department of Housing and Urban Development, Flood Insurance Study, City of Loveland Colorado, Larimer County, March 1978.

United States Department of Housing and Urban Development, Flood Insurance Study-Town of Wellington, Colorado, Larimer County, August, 1978.

United States Department of Housing and Urban Development, Guide for Ordinance Development, No. 1 (b), Community Assistance Series, September 1978.

United States Department of Housing and Urban Development, Guide for Ordinance Development, No. 1 (c), Community Assistance Series, September 1978.

United States Department of Housing and Urban Development, Guide for Ordinance Development, No. 1 (d), Community Assistance Series, June 1978.

United States Department of Housing and Urban Development, How to Read A Flood Insurance Rate Map, September, 1977.

United States Department of Housing and Urban Development, How To Read Flood Hazard Boundary Maps, October, 1978.

United States Department of Housing and Urban Development, National Flood Insurance Program, Application Forms.

United States Department of Housing and Urban Development, What Colorado Residents Should Know About Flood Insurance.

United States Water Resources Council, A Unified National Program for Flood Plain Management, September, 1979.

United States Water Resources Council, Flood Hazard Evaluation Guidelines for Federal Executive Agencies, May 1972.

Waanaanen, A. O., Limerinos, J. T., Kockelman, W. J., U. S. Geological Survey, and Spangle, W. E., Blair, M. L., and William Spangle and Associates, Flood-prone areas and landuse planning - Selected examples from the San Francisco Bay Region, Calif., United States Government Printing Office, Washington, 1977.

White, Gilbert F., Flood Hazard in the United States: A Research Assessment, Ed. Institute of Behavioral Science, The University of Colorado, Boulder, Colorado, 1975.

White, Gilbert, F., Nonstructural Floodplain Management Study Overview, University of Colorado, Boulder, Colorado, October, 1979.

APPENDIX A

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

STANDARD FLOOD INSURANCE POLICY

(Issued Pursuant to the National Flood Insurance Act of 1968, or Any Acts Amendatory Thereof)

DWELLING FORM

IN CONSIDERATION OF THE PAYMENT OF THE PREMIUM, IN RELIANCE UPON THE STATEMENTS IN THE APPLICATION AND DECLARATIONS FORM MADE A PART HEREOF AND SUBJECT TO ALL THE TERMS OF THIS POLICY, THE INSURER DOES INSURE the Insured and legal representatives, to the extent of the actual cash value of the property at the time of loss, but not exceeding the amount which it would cost to repair or replace the property with material of like kind and quality within a reasonable time after such loss, without allowance for any increased cost of repair or reconstruction by reason of any ordinance or law regulating construction or repair, and without compensation for loss resulting from interruption of business or manufacture, nor in any event for more than the interest of the insured, against all **DIRECT LOSS BY "FLOOD"** as defined herein, to the property described while located or contained as described in the application and declarations form attached hereto, or pro rata for 45 days at each proper place to which any of the property shall necessarily be removed for preservation from the peril of "Flood", but not elsewhere.

Assignment of this policy by the Insured is allowed. The Insurer under this Policy is the Department of Housing and Urban Development.

DEFINITION OF "FLOOD"

Wherever in this policy the term "flood" occurs, it shall be held to mean:

A. A general and temporary condition of partial or complete inundation of normally dry land areas from:

1. The overflow of inland or tidal waters.
2. The unusual and rapid accumulation or runoff of surface waters from any source
3. Mudslide (i.e., mudflow), a river or flow of liquid mud proximately caused by flooding as defined in subparagraph A-2 above or by the accumulation of water under the ground.

B. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding the anticipated cyclical levels.

PERILS EXCLUDED

The Insurer shall not be liable for loss:

A. By (1) rain, snow, sleet, hail or water spray; (2) freezing, thawing or by the pressure or weight of ice or water, except where the property covered has been simultaneously damaged by flood; (3) water, moisture or mudslide (i.e., mudflow) damage of any kind resulting primarily from conditions, causes or occurrences which are solely related to the described premises or are within the control of the insured (including but not limited to design, structural or mechanical defects, failures, stoppages or breakages of water or sewer lines, drains, pumps, fixtures, or equipment) or any condition which causes flooding which is substantially confined to the described premises or properties immediately adjacent thereto; or (4) seepage, backup of water, or hydrostatic pressure not related to a condition of "flood" as defined;

B. Caused directly or indirectly by (1) hostile or warlike action in time of peace or war, including action in hindering, combating or defending against an actual, impending or expected attack, (a) by any government or sovereign power (de jure or de facto), or by any authority maintaining or using military, naval or air forces, or (b) by military, naval or air forces, or (c) by an agent of any such government, power authority or forces, it being understood that any discharge, explosion or use of any weapon of war employing nuclear fission or fusion shall be conclusively presumed to be such a hostile or warlike action by such a government, power, authority or forces; (2) insurrection, rebellion, revolution, civil war, usurped power, or action taken by governmental authority in hindering, combating or defending against such an occurrence;

C. By nuclear reaction or nuclear radiation or radioactive contamination, all whether controlled or uncontrolled, or due to any act or condition incident to any of the foregoing, whether such loss be direct or indirect, proximate or remote, or be in whole or in part caused by, contributed to, or aggravated by the peril insured against by this policy;

D. By theft or by fire, windstorm, explosion, earthquake, landslide or any other earth movement except such mudslide or erosion as is covered under the peril of flood;

E. Caused by or resulting from power, heating or cooling failure, unless such failure results from physical damage to power, heating or cooling equipment situated on premises where the property covered is located, caused by the peril insured against;

F. Caused directly or indirectly by neglect of the Insured to use all reasonable means to save and preserve the property at the time of and after an occurrence of the peril insured against by this policy; but, for contents covered herein and subject to the terms of the policy including the limits of liability, the Insurer will reimburse the Insured for reasonable expenses necessarily incurred by him in complying with the requirements of this paragraph, including but not limited to, reasonable expenses for removal or temporary storage (not exceeding 45 days), or both, of insured contents, from the described premises because of the imminent danger of flood

PROPERTY COVERED

A. Dwelling: The term "dwelling" shall mean a residential building designed for the occupancy of from 1 to 4 families and occupied principally for dwelling purposes by the number of families stated herein.

When the insurance under this policy covers a dwelling, such insurance shall include additions in contact therewith; also, if the property of the owner of the described dwelling and when not otherwise covered, building equipment, fixtures and outdoor equipment, all pertaining to the service of the described premises and while within an enclosed structure located on the described premises; also, materials and supplies while within an enclosed structure located on the described premises or adjacent thereto, intended for use in construction, alteration or repair of such dwelling or appurtenant private structures on the described premises.

The Insured may apply up to 10% of the amount of insurance applicable to the dwelling covered under this policy, not as an additional amount of insurance, to cover loss to appurtenant private structures (other than the described dwelling and additions in contact therewith) located on the described premises. This extension of coverage shall not apply to structures (other than structures used exclusively for private garage purposes) which are rented or leased in whole or in part, or held for such rental or lease, to other than a tenant of the described dwelling, or which are used in whole or in part for commercial, manufacturing or farming purposes.

B. Contents: When the insurance under this policy covers contents, such insurance shall cover all household and personal property usual or incidental to the occupancy of the premises as a dwelling—except other property not covered under the provisions of this policy, and any property more specifically covered in whole or in part by other insurance including the peril insured against in this policy; belonging to the Insured or members of the Insured's family of the same household, or for which the Insured may be liable, or, at the option of the Insured, belonging to a servant or guest of the Insured; all while within an enclosed structure located on the described premises.

The Insured may apply up to 10% of the amount of insurance applicable to the contents covered under this policy, not as an additional amount of insurance, as follows:

(a) If not owner of the described premises, to cover loss to improvements, alterations, and additions to the described dwelling appurtenant enclosed private structures as described above.

(b) If an individual condominium unit owner of the described premises, to cover loss to the interior walls, floors, and ceilings that are not otherwise covered under a condominium association policy on the described dwelling and appurtenant enclosed private structures as described above.

The Insurer shall not be liable for loss in any one occurrence for more than:

1. $500.00 in the aggregate on paintings, etchings, pictures, tapestries, art glass windows and other works of art (such as but not limited to statuary, marbles, bronzes, antique furniture, rare books, antique silver, porcelains, rare glass or bric-a-brac);
2. $500.00 in the aggregate on jewelry, watches, necklaces, bracelets, gems, precious and semi-precious stones, articles of gold, silver or platinum and furs or any article containing fur which represents its principal value.

C. Debris Removal: This insurance covers expense incurred in the removal of debris of or on the dwelling, appurtenant enclosed private structures or contents covered hereunder, which may be occasioned by loss caused by the peril insured against in this policy.

The total liability under this policy for both loss to property and debris removal expense shall not exceed the amount of insurance applying under this policy to the property covered.

PROPERTY NOT COVERED

This policy shall not cover:

A. Accounts, bills, currency, deeds, evidences of debt, money, securities, bullion, manuscripts or other valuable papers or records, numismatic or philatelic property.

B. Fences, retaining walls, seawalls, outdoor swimming pools, bulkheads, wharves, piers, bridges, docks; other open structures located on or partially over water; or personal property in the open.

C. Land values; lawn, trees, shrubs or plants, growing crops, or livestock; underground structures or underground equipment, and those portions of walks, driveways and other paved or poured surfaces outside the foundation walls of the structure.

D. Animals, birds, fish; aircraft and motor vehicles (other than motorized equipment pertaining to the services of the premises and not licensed for highway use) including their parts and equipment; trailers on wheels; watercraft including their furnishings and equipment; and business property.

DEDUCTIBLES

A. With respect to loss to the dwelling, appurtenant private structures, and debris removal covered hereunder, the Insurer shall be liable for only that portion of the loss in any one occurrence which is in excess of $200.00

B. With respect to loss to contents or debris removal covered hereunder, or to expenses, incurred under paragraph F of "Perils Excluded," the Insurer shall be liable for only that portion of the loss in any one occurrence which is in excess of $200.00.

REPLACEMENT COST PROVISIONS

These provisions shall apply only to a Single Family Dwelling covered hereunder. Outdoor radio and television antennas and aerials, carpeting, awnings, domestic appliances and outdoor equipment, all whether attached to the building structure or not, are excluded from the replacement cost coverage.

A. If at the time of loss the total amount of insurance applicable to said dwelling is 80% or more of the full replacement cost of such dwelling, or is the maximum amount of insurance available under the National Flood Insurance Program, the coverage of this policy applicable to such dwelling is extended to include the full cost of repair or replacement (without deduction for depreciation).

B. If at the time of loss the total amount of insurance applicable to said dwelling is less than 80% of the full replacement cost of such dwelling and less than the maximum amount of insurance available under the National Flood Insurance Program, the Insurer's liability for loss under this policy shall not exceed the larger of the following amounts:

1. the actual cash value (meaning replacement cost less depreciation) of that part of the dwelling damaged or destroyed; or
2. That portion of the full cost of repair or replacement without deduction for depreciation of that part of the dwelling damaged or destroyed, which the total amount of insurance applicable to said dwelling bears to 80% of the full replacement cost of such dwelling.

   If 80% of the full replacement cost of such dwelling is greater than the maximum amount of insurance available under the National Flood Insurance Program, use the maximum amount in lieu of the 80% figure in the application of this limit.

C. The Insurer's liability for loss under this policy shall not exceed the smallest of the following amounts:

1. The limit of liability of this policy applicable to the damaged or destroyed building.
2. The replacement cost of the dwelling or any part thereof identical with such dwelling on the same premises and intended for the same occupancy and use; or
3. The amount actually and necessarily expended in repairing or replacing said dwelling or any part thereof intended for the same occupancy and use.

D. When the full cost of repair or replacement is more than $1,000 or more than 5% of the whole amount of insurance applicable to said dwelling, the Insurer shall not be liable for any loss under paragraph A or subparagraph B-2 of these provisions unless and until actual repair or replacement is completed.

E. In determining if the whole amount of insurance applicable to said dwelling is 80% or more of the full replacement cost of such dwelling, the cost of excavations, underground flues and pipes, underground wiring and drains, and brick, stone and concrete foundations, piers and other supports which are below the under surface of the lowest basement floor, or where there is no basement, which are below the surface of the ground inside the foundation walls, shall be disregarded.

F. The Named Insured may elect to disregard this condition in making claim hereunder, but such election shall not prejudice the Named Insured's right to make further claim within 180 days after loss for any additional liability brought about by these provisions

GENERAL CONDITIONS AND PROVISIONS

A. Pair and Set Clause—If there is loss of an article which is part of a pair or set, the measure of loss shall be a reasonable and fair proportion of the total value of the pair or set, giving consideration to the importance of said article, but such loss shall not be construed to mean total loss of the pair or set.

B. Concealment, Fraud—This entire policy shall be void if, whether before or after a loss the Insured has willfully concealed or misrepresented any material fact or circumstance concerning this insurance or the subject thereof, or the interest of the Insured therein, or in case of any fraud or false swearing by the Insured relating thereto.

C. Other Insurance—The Insurer shall not be liable for a greater proportion of any loss, less the amount of deductible, from the peril of flood than the amount of insurance under this policy bears to the whole amount of flood insurance (excluding therefrom any amount of "excess insurance" as hereinafter defined) covering the property, or which would have covered the property except for the existence of this insurance, whether collectible or not.

In the event that the whole amount of flood insurance (excluding therefrom any amount of "excess insurance" as hereinafter defined) covering the property exceeds the maximum amount of insurance permitted under the provisions of the National Flood Insurance Act of 1968, or any acts amendatory thereof, it is hereby understood and agreed that the insurance under this policy shall be limited to a proportionate share of the maximum amount of insurance permitted on such property under said Act, and that a refund of any extra premium paid, computed on a pro rata basis, shall be made by the Insurer upon request in writing submitted not later than 2 years after the expiration of the policy term during which such extra amount of insurance was in effect.

"Excess Insurance" as used herein shall be held to mean insurance of such part of the actual cash value of the property as is in excess of the maximum amount of insurance permitted under said Act with respect to such property.

D. Added and Waiver Provisions—The extent of the application of insurance under this policy and of the contribution to be made by the Insurer in case of loss, and any other provision or agreement not inconsistent with the provisions of this policy, may be provided for in writing added hereto, but no provision may be waived except such as by the terms of this policy is subject to change

No permission affecting this insurance shall exist, or waiver of any provision be valid unless granted herein or expressed in writing added hereto. No provision, stipulation or forfeiture shall be held to be waived by any requirement or proceeding on the part of the Insurer relating to appraisal or to any examination provided for herein.

E. Cancellation of Policy or Reduction in Amount of Insurance—This policy may be cancelled at any time at the request of the Insured, in which case the Insurer shall, upon demand and surrender of this policy, refund the excess of paid premiums above the customary short rates for the expired time; provided, however, that the premium paid for the then current policy term shall be fully earned if the Insured retains an interest in the property covered at the location described in the application and declarations form.

The amount of insurance under this policy may be reduced at any time at the request of the Insured, in which case the Insurer shall, upon demand, refund the excess of paid premiums above the customary short rates for the expired time for the amount of the reduction; provided, however, that the premium paid for the then current policy term shall be fully earned to the extent that the Insured retains an interest in the property covered at the location described in the application and declarations form.

This policy may be cancelled by the Insurer for non-payment of the premium by giving to the Insured a 20-days' written notice of cancellation.

F. Conditions Suspending or Restricting Insurance—Unless otherwise provided in writing added hereto, the Insurer shall not be liable for loss occurring while the hazard is increased by any means within the control or knowledge of the Insured, provided, however, this insurance shall not be prejudiced by any act or neglect of any person (other than the Insured), when such act or neglect is not within the control of the Insured.

G. Alterations and Repairs—Permission is granted to make alterations, additions and repairs, and to complete structures in course of construction. In the event of loss hereunder, the Insured is permitted to make reasonable repairs, temporary or permanent, provided such repairs are confined solely to the protection of the property from further damage and provided further that the Insured shall keep an accurate record of such repair expenditures. The cost of any such repairs directly attributable to damage by the peril insured against shall be included in determining the amount of loss hereunder. Nothing herein contained is intended to modify the policy requirements applicable in case loss occurs, and in particular the requirement that in case loss occurs the Insured shall protect the property from further damage

H. Property of Others—Unless otherwise provided in writing added hereto, loss to any property of others covered under this policy shall be adjusted with the Insured for the account of the owners of said property, except that the right to adjust such loss with said owners is reserved to the Insurer. Any such insurance under this policy shall not inure directly or indirectly to the benefit of any carrier or other bailee for hire.

I. Liberalization Clause—If during the period that insurance is in force under this policy, or within 45 days prior to the inception date thereof, on behalf of the Insurer there be adopted under the National Flood Insurance Act of 1968, or any acts amendatory thereof, any forms, endorsements, rules or regulations by which this policy could be extended or broadened, without additional premium charge, by endorsement or substitution of form, then such extended or broadened insurance shall inure to the benefit of the Insured hereunder as though such endorsement or substitution of form had been made.

J. Statutory Provisions—Any terms of this policy which are in conflict with the statutes of the state wherein the property is located are hereby amended to conform to such statutes, except that in cases of conflict with applicable Federal law or regulation, such Federal law or regulation shall control the terms of this policy

K. Loss Clause—Payment of any loss under this policy shall not reduce the amount of insurance applicable to any other loss during the policy term which arises out of a separate occurrence of the peril insured against hereunder; provided, that all loss arising out of a continuous or protracted occurrence shall be deemed to constitute loss arising out of a single occurrence.

L. Mortgage Clause (Applicable to building items only and effective only when policy is made payable to a mortgagee (or trustee) named in the application and declarations form attached to this policy)—

Loss, if any, under this policy, shall be payable to the aforesaid as mortgagee (or trustee) as interest may appear under all present or future mortgages upon the property described in which the aforesaid may have an interest as mortgagee (or trustee), in order of precedence of said mortgages, and this insurance, as to the interest of the mortgagee (or trustee) only therein, shall not be invalidated by any act or neglect of the mortgagor or owner of the described property, nor by any foreclosure or other proceedings or notice of sale relating to the property, nor by any change in the title or ownership of the property, nor by the occupation of the premises for purposes more hazardous than are permitted by this policy; provided, that in case the mortgagor or owner shall neglect to pay any premium due under this policy, the mortgagee (or trustee) shall, on demand, pay the same.

Provided, also, that the mortgagee (or trustee) shall notify the Insurer of any change of ownership or occupancy or increase of hazard which shall come to the knowledge of said mortgagee (or trustee) and, unless permitted by this policy, it shall be noted thereon and the mortgagee (or trustee) shall, on demand, pay the premium for such increased hazard for the term of the use thereof; otherwise this policy shall be null and void.

If this policy is cancelled by the Insurer, it shall continue in force for the benefit only of the mortgagee (or trustee) for 30 days after written notice to the mortgagee (or trustee) of such cancellation and shall then cease, and the Insurer shall have the right, on like notice, to cancel this agreement.

Whenever the Insurer shall pay the mortgagee (or trustee) any sum for loss under this policy and shall claim that, as to the mortgagor or owner, no liability therefor existed, the Insurer shall, to the extent of such payment, be thereupon legally subrogated to all the rights of the party to whom such payment shall be made, under all securities held as collateral to the mortgage debt, or may, at its option, pay to the mortgagee (or trustee) the whole principal due or to grow due on the mortgage with interest, and shall thereupon receive a full assignment and transfer of the mortgage and of all such other securities, but no subrogation shall impair the right of the mortgagee (or trustee) to recover the full amount of said mortgagee's (or trustee's) claim.

M. Mortgagee Obligations—If the Insured fails to render proof of loss, the named mortgagee (or trustee), upon notice, shall render proof of loss in the form herein specified within 60 days thereafter and shall be subject to the provisions of this policy relating to appraisal and time of payment and of bringing suit.

N. Requirements In Case of Loss—The Insured shall give written notice, as soon as practicable, to the Insurer of any loss, protect the property from further damage, forthwith separate the damaged and undamaged property and put it in the best possible order. Within 60 days after the loss, unless such time is extended in writing by the Insurer, the Insured shall render to the Insurer, a proof of loss, signed and sworn to by the Insured, stating the knowledge and belief of the Insured as to the following: the time and origin of the loss, the interest of the Insured and of all others in the property, actual cash value of each item thereof and the amount of loss thereto, all encumbrances thereon, all other contracts of insurance, whether valid or not, covering any of said property, any changes in the title, use, occupation, location, possession or exposures of said property since the issuing of this policy, by whom and for what purpose any building herein described and the several parts thereof were occupied at the time of loss. The Insured, at the option of the Insurer, may be required to furnish a complete inventory of the destroyed, damaged and undamaged property, showing in detail quantities, costs, actual cash value and amount of loss claimed, and verified plans and specifications of any building, fixtures or machinery destroyed or damaged.

The Insured, as often as may be reasonably required, shall exhibit to any person designated by the Insurer all that remains of any property herein described, and submit to examinations under oath by any person named by the Insurer, and subscribe the same; and, as often as may be reasonably required, shall produce for examination all books of account, bills, invoices and other vouchers, or certified copies thereof if originals be lost, at such reasonable time and place as may be designated by the Insurer or its representative, and shall permit extracts and copies thereof to be made.

O. Appraisal—In case the Insured and the Insurer shall fail to agree as to the actual cash value or the amount of loss, then, on the written demand of either, each shall select a competent and disinterested appraiser and notify the other of the appraiser selected within 20 days of such demand. The appraisers shall first select a competent and disinterested umpire; and failing for 15 days to agree upon such umpire, then, on request of the Insured or the Insurer, such umpire shall be selected by a judge of a court of record in the State in which the insured property is located. The appraisers shall then appraise the loss, stating separately actual cash value and loss to each item; and, failing to agree, shall submit their differences, only, to the umpire. An award in writing, so itemized, of any two when filed with the Insurer shall determine the amount of actual cash value and loss. Each appraiser shall be paid by the party selecting him and the expenses of appraisal and umpire shall be paid by the parties equally.

P. Options—It shall be optional with the Insurer to take all, or any part, of the property at the agreed or appraised value, and also to repair, rebuild or replace the property destroyed or damaged with other of like kind and quality within a reasonable time, on giving notice of its intention so to do within 30 days after the receipt of the proof of loss herein required.

Q. Abandonment—There shall be no abandonment to the Insurer of any property.

R. When Loss Payable—The amount of loss for which the Insurer may be liable shall be payable 60 days after proof of loss, as herein provided, is received by the Insurer and ascertainment of the loss is made either by agreement between the Insured and the Insurer expressed in writing or by the filing with the Insurer of an award as herein provided.

S. Action Against the Insurer—No suit or action on this policy for the recovery of any claim shall be sustainable in any court of law or equity unless all the requirements of this policy shall have been complied with, and unless commenced within 12 months next after the date of mailing of notice of disallowance or partial disallowance of the claim. An action on such claim against the Insurer may be instituted, without regard to the amount in controversy, in the United States District Court for the district in which the property shall have been situated.

T. Subrogation—In the event of any payment under this policy, the Insurer shall be subrogated to all the Insured's right of recovery therefor against any party, and the Insurer may require from the Insured an assignment of all rights of recovery against any party for loss to the extent that payment therefor is made by the Insurer. The Insured shall do nothing after loss to prejudice such right; however, this insurance shall not be invalidated should the Insured waive in writing prior to a loss any or all right of recovery against any party for loss occurring to the described property.

IN WITNESS WHEREOF, the Insurer has executed and attested these presents; but this policy shall not be valid unless countersigned by the duly authorized representative of the Insurer.

Patricia Roberts Harris

Patricia Roberts Harris
Secretary

HUD 1618 (9-77)

APPENDIX B

LISTS OF INTERVIEWEES AND QUESTIONS

This appendix is not provided in order to supply the confidential detailed responses of those people interviewed. It is provided to document the questions asked and list the persons interviewed for the specialized readers who may be interested in the study procedures or in expanding on the research done. Proper statistical procedures were not utilized in selecting persons to interview. The larger banks and insurance agencies were contacted rather than utilizing a random sampling technique. It is possible that some of the conclusions drawn may not be appropriate for the smaller banks and insurance agencies. The responses to the interviews are summarized in Chapters V and VI of this report for the community officials interviewed and Chapter VI for all others interviewed.

Community Officials

A general list of questions was not prepared prior to interviewing the community officials. The purpose of the interviews in each community was to gain an understanding of the degree of acceptance of the flood insurance program. Also, information was obtained on each community's implementation of the program. The following community officials were interviewed:

1. Marc Engemoen - City of Fort Collins, Planning
2. Sam Sasaki - City of Greeley, Director of Planning
3. John Hensley - Larimer County, Office of Emergency Management
4. Kathleen Phillips - Larimer County, Planning
5. John Connors - City of Loveland, ex-City Councilman
6. Ray Reeb - City of Loveland, City Councilman
7. Todd Shimoda - City of Loveland, Assistant to the Public Works Director

Real Estate Sales Persons

A list of questions was not prepared prior to interviewing the real estate agents. Basically they were questioned concerning their awareness of the designated flood hazard areas and whether they feel it is their duty to inform perspective buyers of flood threats associated with a particular property. The following sales persons were interviewed:

1. Mr. Sennett - Sennett's Realty
2. Don Evans - Realty World
3. Richard A. Bennet - The Group

Real Estate Loan Officers

Two lists of questions were prepared prior to interviewing the real estate loan officers. One list was utilized in communities currently under the regular phase of the flood insurance program. The second list was prepared specifically for the cities of Loveland and Greeley who have been suspended from the program. Some questions were added to the first list as a result of some of the information obtained in the interviews of insurance agents and real estate loan officers. When additional questions were added, earlier interviewees were again contacted to gain their response to the new questions. For communities under the regular program the following questions were asked:

1. Do people who are required by the bank to purchase flood insurance order to obtain a mortgage normally just purchase the amount the bank requires or do they insure themselves up to the value of their structures and contents?
2. Is the flood insurance coverage increased over time as their homeowners coverage is?

3. Do people usually still purchase the home when they are notified of the flood hazard and the requirements to purchase flood insurance in order to obtain a mortgage?
4. Are they usually aware of the flood hazard prior to bank notification?
5. Is your bank supportive of the flood insurance program and its philosophy?
6. Do you inform people whose mortgages you already hold of the fact that they are located in the flood plain and subsidized flood insurance is available in hopes of increasing the security of your investment and providing a community service?
7. Has anyone who was required to purchase flood insurance in order to obtain a mortgage loan from your bank later cancelled that insurance?
8. What would you do if a mortgagee does not renew the flood insurance policy you required him or her to have in order to obtain a mortgage?
9. Do you require mortgagees to pay money into an escrow account for use in purchasing flood insurance?

Question 7 and 8 were added after some insurance agents indicated that some of their clients, who were required by the banks to purchase flood insurance in order to obtain their mortgage, do not renew their policies after a year or two and usually get away with it. Question 9 was added after one loan officer indicated that his bank required the flood insurance money be paid into an escrow account to avoid the problem of non renewal. The question was added in order to subtely suggest to the loan officers the way in which one bank was avoiding the problem rather than to obtain information on whether the bank required an escrow account.

For communities currently suspended from the flood insurance program (Loveland and Greeley) the following questions were asked:

1. Do you still notify mortgage applicants if they are in a designated flood hazard area even though your community has been suspended from the flood insurance program?
2. Are you currently or would you make loans to people in flood hazard areas who cannot obtain flood insurance from the federal government?
3. If you made such a loan, would you charge a higher interest rate, points, or in some other way compensate yourselves for the increased risk you are taking?
4. Are people usually aware of the flood hazard prior to bank notification?
5. Is the bank supportive of the flood insurance program and its philosophy?
6. Do people usually still purchase the home when notified of the flood hazard?
7. Do you know why your community has been suspended from the flood insurance program?
8. Is your bank trying to influence the city to get back into the program in order to protect your existing mortgages in the flood plain and avoid having to turn down future mortgage applications for homes in flood hazard areas?

9. If a mortgagee was required to purchase flood insurance in order to obtain his or her loan and that insurance was unable to be renewed due to the suspension of the community, will the mortgagee again be required to purchase flood insurance if the city gets back into the program?

The following real estate loan officers were interviewed:

1. Gregory Braun - Greeley National Bank
2. Margaret Trimble - Greeley National Bank
3. Delores M. Schimpf - First National Bank of Greeley
4. Rich Olson - First National Bank of Fort Collins
5. Dennis Baiden - First National Bank of Fort Collins
6. Christine Taussig - Home Federal Savings, Fort Collins
7. Robert G. Sharritt - United Bank of Fort Collins
8. Jim Vogesser - First National Bank of Loveland
9. Ron Schneider - Sun Savings, Loveland

Insurance Agents

A list of questions was prepared prior to interviewing the insurance agents. Other questions were asked extempoaneously based on the responses the agents gave and in order to better understand and evaluate the flood insurance program's effectiveness. Also, some questions were added and earlier interviewees were contacted to gain their response to the new questions. The following questions were asked:

1. Approximately how many flood insurance policies have you written in the past two years?

   a. 0-5 c. 11-15
   b. 6-10 d. over 15

2. How have the majority of the policies been sold?

   a. Customers referred by banks in conjunction with obtaining a home loan.

   b. Customers requesting the insurance without being required by a bank.

   c. Customers contacted by insurance agent.

3. Do you normally review and update your existing homeowners policies on an annual basis in order to add flood insurance if it is needed?

4. Which is the correct answer? A 100-year flood:

   a. Cannot occur twice in 20 years.

   b. Will occur once in 100 years.

   c. Has a 1 percent chance of occuring in any year.

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

   a. Sell it only when contacted by a customer.

   b. Push the sale and contact customers in the need of flood insurance.

6. Do you feel the present sales commission rates are fair?

7. Why do you feel flood insurance has not been sold or purchased more readily?

   a. Too costly to homeowner.

   b. Homeowners feel they can get disaster relief.

   c. Not enough incentive for agents to sell it.

   d. Poor publicity on the program.

   e. "Won't happen to me attitude".

   f. Distrust of engineering studies.

8. Do you think the people occupying the flood plain who contact you for insurance fully perceive the flood hazard?
9. Do people who are required by the banks to purchase flood insurance in order to obtain a mortgage loan normally just purchase the amount the bank requires or do they insure themselves up to the value of their structures and contents?
10. Do people usually insure their contents?
11. Do people adjust their flood insurance coverage upward at renewal time?
12. Do any of your clients, who are required by the bank to purchase flood insurance, not renew their policy after a year or two?

Questions 10 and 11 were added when one agent indicated that his clients usually only purchased the structural coverage required by the banks and that people do not adjust their coverage upward at renewal time. Question 12 was added when an agent indicated that some people do not renew their flood insurance policies after a year or two even though they were required by the bank to have insurance in order to obtain a mortgage loan.

The following insurance agents were interviewed:

1. Dwain R. Reuter - Farmers Insurance Group
2. Bradly Bischoff - State Farm Mutual
3. Gene Benedict - Benedict and Wolf Agency
4. Colleen Eakin - Galyardt and Harvey Agency
5. Sandy Dodder - L. C. Wilson Agency, Inc.
6. Elizabeth Handy - Randall and Witsen Agency.

FIA Personnel

Virginia Motoyama, Sherman Karcher, and Mike Garcia of FIA in Denver were asked numerous questions concerning the flood insurance program during the personal interviews conducted and in follow-up telephone conversations. In addition, Jim Quinn, the Insurance Servicing Man under contract with FIA, was also asked numerous questions.